

Abbreviation	Description	Charged formula	Charge	Compartment
23CAMP[e]	2',3'-cyclic AMP	C10H11N5O6P		-1 extracellular
23CCMP[e]	2',3'-cyclic CMP	C9H11N3O7P		-1 extracellular
23CGMP[e]	2',3'-cyclic GMP	C10H11N5O7P		-1 extracellular
23CUMP[e]	2',4'-cyclic UMP	C9H10N2O8P		-1 extracellular
2HPA[e]	2-Hydroxyphenylacetate	C8H7O3		-1 extracellular
2KLG[e]	2-dehydro-L-idonate	C6H9O7		-1 extracellular
2MACO[e]	(Z)-but-2-ene-1,2,3-tricarboxylic acid	C7H5O6		-3 extracellular
2MAHMP[e]	4-amino-2-methyl-5-diphosphonatomethylpyrimidine(3-)	C6H8N3O7P2		-3 extracellular
2MCIT[e]	(2R,3S)-2-methylcitrate(3-)	C7H7O7		-3 extracellular
2MICIT[e]	(2S,3R)-3-hydroxybutane-1,2,3-tricarboxylic acid	C7H7O7		-3 extracellular
2NPMB[e]	6-methoxy-2-octaprenyl-1,4-benzoquinone	C47H70O3		0 extracellular
2NPMP[e]	6-methoxy-2-octaprenylphenol	C47H72O2		0 extracellular
2NPPP[e]	2-octaprenylphenol	C46H70O		0 extracellular
2P14NQ[e]	2-Phytyl-1,4-naphthoquinone	C30H44O2		0 extracellular
2PPG[e]	2-phosphoglycolic acid	C2H2O6P		-3 extracellular
34DHMA[e]	3,4-Dihydroxymandelaldehyde	C8H8O4		0 extracellular
34DHPEG[e]	3,4-Dihydroxyphenylethyleneglycol	C8H10O4		0 extracellular
3OPP[e]	3-oxopropanoate	C3H3O3		-1 extracellular
3SPYR[e]	3-sulfofpyruvic acid	C3H2O6S		-2 extracellular
4HBZ[e]	4-hydroxybenzoate	C7H5O3		-1 extracellular
4HDPRO[e]	cis-4-hydroxy-D-proline	C5H9NO3		0 extracellular
4HLT[e]	4-hydroxy-L-threonine	C4H9NO4		0 extracellular
4HMN[e]	4-hydroxymandelonitrile	C8H7NO2		0 extracellular
4HPACALO[e]	(Z)-(4-hydroxyphenyl)acetaldehyde oxime	C8H9NO2		0 extracellular
56DTHM[e]	5,6-dihydrothymine	C5H8N2O2		0 extracellular
5FTHF[e]	5-formyltetrahydrofolic acid	C20H21N7O7		-2 extracellular
5MC[e]	5-methylcytosine	C5H8N3O		1 extracellular
5MC[e]	5-methylcytosine	C5H8N3O		1 extracellular
5OPRO[e]	5-oxo-L-prolinate	C5H6NO3		-1 extracellular
A5P[e]	D-arabinose 5-phosphate	C5H9O8P		-2 extracellular
ACACP[e]	acyl-[acyl-carrier protein]	C13H23O8N2PRS		-1 extracellular
ACAL[e]	acetaldehyde	C2H4O		0 extracellular
ACP[e]	holo-[acyl-carrier protein]	C11H21N2O7PRS		-1 extracellular
AD[e]	adenine	C5H5N5		0 extracellular
ADN[e]	adenosine	C10H13N5O4		0 extracellular
AGMT[e]	agmatine	C5H16N4		2 extracellular
AIBUT[e]	(S)-3-aminoisobutyrate	C4H8NO2		0 extracellular
AICAD[e]	5-Amino-4-imidazolecarboxamide	C4H6N4O		0 extracellular
AKA[e]	2-oxoadipic acid	C6H6O5		-2 extracellular
AKG[e]	2-oxoglutaric acid	C5H4O5		-2 extracellular
ALA[e]	L-alanine	C3H7NO2		0 extracellular
ALAASP[e]	ala-L-asp-L	C7H11N2O5		-1 extracellular
ALAGLN[e]	Ala-Gln	C8H15N3O4		0 extracellular
ALAGLU[e]	ala-L-glu-L	C8H13N2O5		-1 extracellular
ALAHIS[e]	Ala-His	C9H14N4O3		0 extracellular
ALALEU[e]	Ala-Leu	C9H18N2O3		0 extracellular
ALATHR[e]	ala-L-Thr-L	C7H14N2O4		0 extracellular
ALTRNA[e]	Arg-tRNA(Arg)	C6H14N4OR		2 extracellular
AMP[e]	AMP	C10H12N5O7P		-2 extracellular
APOACP[e]	apo-[acyl-carrier protein]	R		0 extracellular
APOACP[e]	apo-[acyl-carrier protein]	R		0 extracellular
APOCARB[e]	Apo-[carboxylase]	C7H13N3O2R2		0 extracellular
AR5P[e]	alpha-D-ribose 5-phosphate	C5H9O8P		-2 extracellular
ARG[e]	L-arginine	C6H15N4O2		1 extracellular
ASN[e]	L-asparagine	C4H8N2O3		0 extracellular
ASP[e]	L-aspartic acid	C4H6NO4		-1 extracellular
ATHR[e]	L-allothreonine	C4H9NO3		0 extracellular
ATRNA[e]	tRNA(Ala)	R		0 extracellular
BA[e]	benzoic acid	C7H5O2		-1 extracellular
BCCP[e]	Holo-[carboxylase]	C17H27N5O4SR2		0 extracellular
bFRU[e]	beta-D-fructofuranose	C6H12O6		0 extracellular
BIOMASS[e]	Biomass	R		0 extracellular

bLYS[e]	(3S)-3,6-diaminohexanoic acid	C6H15N2O2	1 extracellular
BT[e]	biotin	C10H15N2O3S	-1 extracellular
C181ACP[e]	Oleoyl-[acyl-carrier protein]	C29H53N2O8PRS	-1 extracellular
CAPTRSC[e]	N-carbamoylputrescine	C5H14N3O	1 extracellular
CDPETN[e]	CDP-ethanolamine	C11H19N4O11P2	-1 extracellular
CDPGL[e]	CDP-glycerol	C12H19N3O13P2	-2 extracellular
CELLOB[e]	cellobiose	C12H22O11	0 extracellular
CHIB[e]	N,N'-diacetylchitobiose	C16H28N2O11	0 extracellular
CHO[e]	choline	C5H14NO	1 extracellular
CHO[e]	choline	C5H14NO	1 extracellular
CIT[e]	citric acid	C6H5O7	-3 extracellular
CMP[e]	CMP	C9H12N3O8P	-2 extracellular
CMS[e]	N-carbamoylsarcosine	C4H7N2O3	-1 extracellular
CO2[e]	carbon dioxide	CO2	0 extracellular
COA[e]	coenzyme A	C21H32N7O16P3S	-4 extracellular
CPG[e]	coproporphyrinogen I	C36H40N4O8	-4 extracellular
CRTN[e]	creatine	C4H9N3O2	0 extracellular
CTRNA[e]	tRNA(Cys)	R	0 extracellular
CVN[e]	Cinnavalinate	C14H6N2O6	-2 extracellular
CYS[e]	L-cysteine	C3H7NO2S	0 extracellular
CYSTE[e]	L-cysteic acid	C3H6NO5S	-1 extracellular
CYTS[e]	cytosine	C4H5N3O	0 extracellular
DAD5[e]	5'-deoxyadenosine	C10H13N5O3	0 extracellular
DALA[e]	D-alanine	C3H7NO2	0 extracellular
DASP[e]	D-aspartic acid	C4H6NO4	-1 extracellular
DC[e]	2'-deoxycytidine	C9H13N3O4	0 extracellular
DHEND[e]	2,4-dihydroxyhept-2-enedioic acid	C7H8O6	-2 extracellular
DHF[e]	dihydrofolic acid	C19H19N7O6	-2 extracellular
DHN[e]	1,4-dihydroxy-2-naphthoic acid	C11H7O4	-1 extracellular
DHN[e]	1,4-dihydroxy-2-naphthoic acid	C11H7O4	-1 extracellular
DHPT[e]	7,8-dihydropteroic acid	C14H13N6O3	-1 extracellular
DHPT[c]	7,8-dihydropteroic acid	C14H13N6O3	-1 extracellular
DITP[e]	2'-deoxyinosine-5'-triphosphate	C10H11N4O13P3	-4 extracellular
DLIPO[e]	Enzyme N6-(dihydrolipoyl)lysine	C8H16NOS2R	0 extracellular
DLIPO[e]	Enzyme N6-(dihydrolipoyl)lysine	C8H16NOS2R	0 extracellular
DMET[e]	D-methionine	C5H11NO2S	0 extracellular
DPHE[e]	D-phenylalanine	C9H11NO2	0 extracellular
DPM[e]	dopamine	C8H12NO2	1 extracellular
DPRO[e]	D-proline	C5H9NO2	0 extracellular
DRIB[e]	2-deoxy-D-ribose	C5H10O4	0 extracellular
DTMP[e]	dTMP	C10H13N2O8P	-2 extracellular
DTRNA[e]	tRNA(Asp)	R	0 extracellular
DU[e]	2'-deoxyuridine	C9H12N2O5	0 extracellular
DXUL[e]	1-deoxy-D-xylulose	C5H10O4	0 extracellular
DXUL[e]	1-deoxy-D-xylulose	C5H10O4	0 extracellular
ETHAM[e]	ethanolamine	C2H8NO	1 extracellular
ETOL[e]	ethanol	C2H6O	0 extracellular
ETRNA[e]	tRNA(Glu)	R	0 extracellular
FE2[e]	iron(2+)	Fe	2 extracellular
FE3[e]	iron(3+)	Fe	3 extracellular
FOR[e]	formate	CH1O2	-1 extracellular
FRDP[e]	farnesyl pyrophosphate(3-)	C15H25O7P2	-3 extracellular
FRU[e]	D-fructose	C6H12O6	0 extracellular
FTRNA[e]	tRNA(Phe)	R	0 extracellular
FUM[e]	fumaric acid	C4H2O4	-2 extracellular
G1P[e]	D-glucopyranose 1-phosphate	C6H11O9P	-2 extracellular
G6P[e]	alpha-D-glucose 6-phosphate	C6H11O9P	-2 extracellular
GAL[e]	D-galactopyranose	C6H12O6	0 extracellular
GALUNT[e]	aldehydo-D-galacturonate	C6H9O7	-1 extracellular
GDPFUC[e]	GDP-L-fucose	C16H23N5O15P2	-2 extracellular
GL[e]	glycerol	C3H8O3	0 extracellular
GL3P[e]	sn-glycerol 3-phosphate	C3H7O6P	-2 extracellular
GLC[e]	D-glucopyranose	C6H12O6	0 extracellular

GLCUNT[e]	D-glucopyranuronic acid	C6H9O7	-1 extracellular
GLN[e]	L-glutamine	C5H10N2O3	0 extracellular
GLTCOA[e]	glutaryl-CoA	C26H37N7O19P3S	-5 extracellular
GLU[e]	L-glutamic acid	C5H8NO4	-1 extracellular
GLUP[e]	alpha-D-Glutamyl phosphate	C5H8NO7P	-2 extracellular
GLY[e]	glycine	C2H5NO2	0 extracellular
GLYA[e]	glycolic acid	C2H3O3	-1 extracellular
GLYAL[e]	D-glyceraldehyde	C3H6O3	0 extracellular
GLYASN[e]	glycyl-L-asparagine	C6H11N3O4	0 extracellular
GLYASP[e]	N-glycyl-L-aspartic acid	C6H9N2O5	-1 extracellular
GLYCEROCHO[e]	sn-glycero-3-phosphocholine	C8H20NO6P	0 extracellular
GLYCEROPE[e]	sn-glycero-3-phosphoethanolamine	C5H14NO6P	0 extracellular
GLYCYS[e]	glycylcysteine	C5H10N2O3S	0 extracellular
GLYGLN[e]	L-Glycylglutamine	C7H13N3O4	0 extracellular
GLYGLU[e]	glycyl-L-glutamic acid	C7H11N2O5	-1 extracellular
GLYLEU[e]	Gly-Leu	C8H16N2O3	0 extracellular
GLYMET[e]	N-Glycyl-L-methionine	C7H14N2O3S	0 extracellular
GLYPHE[e]	Gly-Phe	C11H14N2O3	0 extracellular
GLYPRO[e]	glycyl-L-Proline	C7H12N2O3	0 extracellular
GLYTYR[e]	Gly-Tyr	C11H14N2O4	0 extracellular
GMP[e]	GMP	C10H12N5O8P	-2 extracellular
GN[e]	guanine	C5H5N5O	0 extracellular
GSN[e]	guanosine	C10H13N5O5	0 extracellular
GTRNA[e]	tRNA(Gly)	R	0 extracellular
GTSPRMD[e]	glutathionylspermidine	C17H36N6O5S	2 extracellular
GUL[e]	L-gulose	C6H12O6	0 extracellular
H[e]	hydrogen	H	1 extracellular
H2O[e]	water	H2O	0 extracellular
H2SO3[e]	sulfurous acid	HO3S	-1 extracellular
HAN[e]	3-hydroxyanthranilic acid	C7H6NO3	-1 extracellular
HCN[e]	hydrogen cyanide	CHN	0 extracellular
HCO3[e]	hydrogencarbonate	CHO3	-1 extracellular
HEME[e]	ferroheme b	C34H30FeN4O4	-2 extracellular
HEMEA[e]	Heme A	C49H54FeN4O6	-2 extracellular
HEMEA[e]	Heme A	C49H54FeN4O6	-2 extracellular
HEMEO[e]	heme o	C49H56FeN4O5	-2 extracellular
HIS[e]	L-histidine	C6H9N3O2	0 extracellular
HOPP[e]	2-hydroxy-3-oxopropanoic acid	C3H3O4	-1 extracellular
HTRNA[e]	tRNA(His)	R	0 extracellular
IDTOL[e]	L-iditol	C6H14O6	0 extracellular
ILE[e]	L-isoleucine	C6H13NO2	0 extracellular
INOSOSE[e]	2,4,6/3,5-pentahydroxycyclohexanone	C6H10O6	0 extracellular
IPP[e]	isopentenyl diphosphate	C5H9O7P2	-3 extracellular
ITRNA[e]	tRNA(Ile)	R	0 extracellular
K[e]	potassium ion	K	1 extracellular
KTRNA[e]	tRNA(Lys)	R	0 extracellular
LAA[e]	L-ascorbate	C6H7O6	-1 extracellular
LAC[e]	(R)-lactic acid	C3H5O3	-1 extracellular
LACAL[e]	(S)-lactaldehyde	C3H6O2	0 extracellular
LACTOSE[e]	Lactose	C12H22O11	0 extracellular
ALAGLY[e]	L-alanylglycine	C5H10N2O3	0 extracellular
LARAB[e]	L-arabinopyranose	C5H10O5	0 extracellular
LEU[e]	L-leucine	C6H13NO2	0 extracellular
LIPDX[e]	lipid X	C34H64NO12P	-2 extracellular
LIPOE[e]	Enzyme N6-(lipoyl)lysine	C8H14NOS2R	0 extracellular
LIPOE[e]	Enzyme N6-(lipoyl)lysine	C8H14NOS2R	0 extracellular
LLCT[e]	cystathionine	C7H14N2O4S	0 extracellular
LMETTRNA[e]	L-Methionyl-tRNA	C5H10NOSR	1 extracellular
LTRNA[e]	tRNA(Leu)	R	0 extracellular
LYS[e]	L-lysine	C6H15N2O2	1 extracellular
MAL[e]	(S)-malic acid	C4H4O5	-2 extracellular
MALCOA[e]	malonyl-CoA	C24H33N7O19P3S	-5 extracellular
MAN[e]	D-mannopyranose	C6H12O6	0 extracellular

MET[e]	L-methionine	C5H11NO2S	0 extracellular
METALA[e]	met-L-ala-L	C8H16N2O3S	0 extracellular
METOX[e]	L-methionine S-oxide	C5H11NO3S	0 extracellular
MI1P[e]	1D-myo-inositol 1-phosphate	C6H11O9P	-2 extracellular
MI3P[e]	1D-myo-inositol 3-phosphate	C6H11O9P	-2 extracellular
MI4P[e]	1D-myo-inositol 4-phosphate	C6H11O9P	-2 extracellular
MLT[e]	maltose	C12H22O11	0 extracellular
MMSA[e]	(S)-methylmalonaldehydic acid	C4H5O3	-1 extracellular
MNT[e]	D-mannitol	C6H14O6	0 extracellular
MPYR[e]	3-mercaptopyruvic acid	C3H3O3S	-1 extracellular
MTHF[e]	5-methyltetrahydrofolic acid	C20H23N7O6	-2 extracellular
MTHGXL[e]	methylglyoxal	C3H4O2	0 extracellular
MTHPTGLU[e]	5-methyltetrahydropteroyltri-L-glutamic acid	C30H39N9O12	0 extracellular
MTRNA[e]	tRNA(Met)	R	0 extracellular
MURNAC6P[e]	N-acetylmuramic acid 6-phosphate	C11H17NO11P	-3 extracellular
MYOI[e]	myo-inositol	C6H12O6	0 extracellular
N4HBZ[e]	4-hydroxy-3-octaprenylbenzoate	C47H69O3	-1 extracellular
NAG[e]	N-acetyl-D-glucosamine	C8H15NO6	0 extracellular
NAMA6P[e]	N-acetyl-D-mannosamine 6-phosphate	C8H14NO9P	-2 extracellular
NH3[e]	ammonia	H4N	1 extracellular
NICA[e]	nicotinic acid	C6H4NO2	-1 extracellular
NMN[e]	NMN zwitterion	C11H14N2O8P	-1 extracellular
O2[e]	dioxygen	O2	0 extracellular
OAHSER[e]	O-acetyl-L-homoserine	C6H11NO4	0 extracellular
OMD[e]	homogentisic acid	C8H7O4	-1 extracellular
OPP[e]	all-trans-octaprenyl diphosphate	C40H65O7P2	-3 extracellular
O2S[e]	superoxide	O2	-1 extracellular
OTHIO[e]	thioredoxin disulfide	C10H12N4O4S2R4	0 extracellular
PAC[e]	phenylacetic acid	C8H7O2	-1 extracellular
PAPS[e]	3'-phospho-5'-adenylyl sulfate	C10H11N5O13P2S	-4 extracellular
PDXI[e]	pyridoxine	C8H11NO3	0 extracellular
PEPTIDO_eco[e]	a peptidoglycan UNITE	C40H62N8O21	-2 extracellular
PHE[e]	L-phenylalanine	C9H11NO2	0 extracellular
PHSER[e]	O-phospho-L-homoserine	C4H8NO6P	-2 extracellular
PI[e]	phosphate(3-)	HO4P	-2 extracellular
PL[e]	1,2-diacyl-sn-glycero-3-phosphocholine	C3844H7688N100O800P100	0 extracellular
PNTO[e]	(R)-pantothenate	C9H16NO5	-1 extracellular
PPI[e]	diphosphate(4-)	HO7P2	-3 extracellular
PQ[e]	phyloquinone	C31H46O2	0 extracellular
PQQ[e]	pyrroloquinoline quinone	C14H3N2O8	-3 extracellular
PQQH2[e]	pyrroloquinoline quinol	C14H5N2O8	-3 extracellular
PRO[e]	L-proline	C5H9NO2	0 extracellular
PROGLY[e]	L-Prolinylglycine	C7H12N2O3	0 extracellular
PROP[e]	propionic acid	C3H5O2	-1 extracellular
PTCYS[e]	N-[(R)-pantothenoyl]-L-cysteine	C12H21N2O6S	-1 extracellular
PTRNA[e]	tRNA(Pro)	RH	0 extracellular
PTRSC[e]	putrescine	C4H14N2	2 extracellular
PTT[e]	pantetheine	C11H22N2O4S	0 extracellular
PYR[e]	pyruvic acid	C3H3O3	-1 extracellular
Q[e]	ubiquinones	C14H18O4R	0 extracellular
Q8[e]	Ubiquinone-8	C49H74O4	0 extracellular
R1P[e]	D-ribose 1-phosphate	C5H9O8P	-2 extracellular
R5P[e]	D-ribose 5-phosphate	C5H9O8P	-2 extracellular
RAF[e]	raffinose	C18H32O16	0 extracellular
RGT[e]	glutathione	C10H16N3O6S	-1 extracellular
RHA[e]	aldehydo-L-rhamnose	C6H12O5	0 extracellular
RIB[e]	D-ribofuranose	C5H10O5	0 extracellular
RIBFLAV[e]	riboflavin	C17H20N4O6	0 extracellular
RTHIO[e]	thioredoxin dithiol	C10H14N4O4S2R4	0 extracellular
RTRNA[e]	tRNA(Arg)	R	0 extracellular
SAM[e]	S-adenosyl-L-methionine	C15H23N6O5S	1 extracellular
SCYS[e]	selenocysteine	C3H7NO2Se	0 extracellular
SCYS[e]	selenocysteine	C3H7NO2Se	0 extracellular

SELNT[e]	selenate	O4Se	0 extracellular
SELNT[e]	selenate	O4Se	0 extracellular
SER[e]	L-serine	C3H7NO3	0 extracellular
SLF[e]	sulfate	O4S	-2 extracellular
SME[e]	shikimic acid	C7H9O5	-1 extracellular
SOR[e]	L-sorbopyranose	C6H12O6	0 extracellular
SOT[e]	D-glucitol	C6H14O6	0 extracellular
SPRMD[e]	spermidine	C7H22N3	3 extracellular
STRNA[e]	tRNA(Ser)	R	0 extracellular
SUC[e]	sucrose	C12H22O11	0 extracellular
SUCC[e]	succinic acid	C4H4O4	-2 extracellular
SUCCOA[e]	succinyl-CoA	C25H35N7O19P3S	-5 extracellular
SUCCSAL[e]	succinic semialdehyde	C4H5O3	-1 extracellular
T3P1[e]	D-glyceraldehyde 3-phosphate	C3H5O6P	-2 extracellular
TAGUR[e]	D-tagaturonate	C6H9O7	-1 extracellular
TCHDIONE[e]	3,5/4-trihydroxycyclohexane-1,2-dione	C6H8O5	0 extracellular
TCYNT[e]	thiocyanic acid	CNS	-1 extracellular
THDP[e]	thiamine(1+) diphosphate	C12H16N4O7P2S	-2 extracellular
THF[e]	(6S)-5,6,7,8-tetrahydrofolic acid	C19H21N7O6	-2 extracellular
THFGLU[e]	5,6,7,8-tetrahydrofolyl-L-glutamic acid	C24H27N8O9	-3 extracellular
THJ[e]	thiosulfate(1-)	HS2O3	-1 extracellular
THME[e]	thiamine	C12H17N4OS	1 extracellular
THPTGLU[e]	tetrahydropteroyltri-L-glutamic acid	C29H37N9O12	0 extracellular
THR[e]	L-threonine	C4H9NO3	0 extracellular
THY[e]	thymine	C5H6N2O2	0 extracellular
THZP[e]	4-methyl-5-(2-phosphonoxyethyl)thiazole	C6H8NO4PS	-2 extracellular
TRE[e]	alpha,alpha-trehalose	C12H22O11	0 extracellular
TRE[e]	alpha,alpha-trehalose	C12H22O11	0 extracellular
TRM[e]	tyramine	C8H12NO	1 extracellular
TRP[e]	L-tryptophan	C11H12N2O2	0 extracellular
TTRNA[e]	tRNA(Thr)	R	0 extracellular
TYR[e]	L-tryptophan	C9H11NO3	0 extracellular
UAAGGLA[e]	undecaprenyldiphospho-N-acetyl-(N-acetylglucosaminyI)	C94H153N8O26P2	-3 extracellular
UDCPDP[e]	undecaprenyl diphosphate	C55H89O7P2	-3 extracellular
UGC[e]	(-)-ureidoglycolic acid	C3H5N2O4	-1 extracellular
UGGLA[e]	UDP-N-acetylmuramoyl-L-alanyl-gamma-D-glutamyl-L-	C40H64N9O26P2	-1 extracellular
UMP[e]	UDP-N-acetylmuramoyl-L-alanyl-D-glutamyl-meso-2,6--	C9H11N2O9P	-2 extracellular
URA[e]	uracil	C4H4N2O2	0 extracellular
URATE[e]	7,9-dihydro-1H-purine-2,6,8(3H)-trione	C5H4N4O3	0 extracellular
UREA[e]	urea	CH4N2O	0 extracellular
VAL[e]	L-valine	C5H11NO2	0 extracellular
VB12[e]	cob(III)alamin	C62H88CoN13O14P	1 extracellular
VTRNA[e]	tRNA(Val)	R	0 extracellular
WTRNA[e]	tRNA(Tyr)	RH	0 extracellular
XAN[e]	9H-xanthine	C5H4N4O2	0 extracellular
XTP[e]	XTP	C10H11N4O15P3	-4 extracellular
XUL[e]	D-xylulose	C5H10O5	0 extracellular
YTRNA[e]	tRNA(Trp)	R	0 extracellular
3MOP[c]	(S)-3-Methyl-2-oxopentanoic acid	C6H9O3	-1 Bme_cytosol
3PG[e]	3-Phospho-D-glycerate	C3H4O7P	-3 extracellular
AC[e]	Acetate	C2H3O2	-1 extracellular
ACGALA[e]	N-Acetyl-D-galactosamine(e)	C8H15NO6	0 extracellular
ACMUM[e]	N-Acetylmuramate(e)	C11H18NO8	-1 extracellular
ACTAC[e]	Acetoacetate(e)	C4H5O3	-1 extracellular
ACTN[e]	(R)-Acetoin	C4H8O2	0 extracellular
AD[e]	Adenine	C5H5N5	0 extracellular
ADN[e]	Adenosine(e)	C10H13N5O4	0 extracellular
ADPR[e]	ADP-ribose	C15H21N5O14P2	-2 extracellular
AG[e]	L-Arogenate	C10H12NO5	-1 extracellular
AHM[e]	4-Amino-5-hydroxymethyl-2-methylpyrimidine	C6H9N3O	0 extracellular
AICAD[e]	5-Amino-4-imidazolecarboxamide	C4H6N4O	0 extracellular
AKG[e]	2-Oxoglutarate(e)	C5H4O5	-2 extracellular
ALA[e]	L-Alanine(e)	C3H7NO2	0 extracellular

ALAASP[e]	ala-L-aspl-L(e)	C7H11N2O5	-1 extracellular
ALAGLN[e]	Ala-Gln(e)	C8H15N3O4	0 extracellular
ALAGLU[e]	ala-L-glu-L(e)	C8H13N2O5	-1 extracellular
ALAGLY[e]	L-alanylglycine(e)	C5H10N2O3	0 extracellular
ALAHIS[e]	Ala-His(e)	C9H14N4O3	0 extracellular
ALALEU[e]	Ala-Leu(e)	C9H18N2O3	0 extracellular
ALATHR[e]	ala-L-Thr-L(e)	C7H14N2O4	0 extracellular
ALLOIN[e]	Allantoin(e)	C4H5N4O3	-1 extracellular
AMOB[e]	S-Adenosyl-4-methylthio-2-oxobutanoate	C15H19N5O6S	0 extracellular
ARBUTIN[e]	Arbutin(e)	C12H16O7	0 extracellular
ARG[e]	L-Arginine(e)	C6H15N4O2	1 extracellular
ASENA[e]	Arsenate	HAsO4	-2 extracellular
ASENI[e]	arsenite	H3AsO3	0 extracellular
ASN[e]	L-Asparagine	C4H8N2O3	0 extracellular
ASP[e]	L-Aspartate(e)	C4H6NO4	-1 extracellular
BA[e]	benzoate	C7H5O2	-1 extracellular
BDOH[e]	(R,R)-2,3-Butanediol	C4H10O2	0 extracellular
BT[e]	Biotin(e)	C10H15N2O3S	-1 extracellular
BUAC[e]	Butanoic acid(e)	C4H7O2	-1 extracellular
BUOL[e]	1-Butanol	C4H10O	0 extracellular
BUTSUL[e]	butanesulfonate(e)	C4H8O3S	-1 extracellular
CA[e]	Calcium(e)	Ca	2 extracellular
CD2[e]	Cd2+ Cadmium	Cd2	2 extracellular
CDPGL[e]	CDP-glycerol	C12H19N3O13P2	-2 extracellular
CELLOB[e]	cellobiose	C12H22O11	0 extracellular
CELLOT[e]	cellotriase	C18H32O16	0 extracellular
CGLY[e]	Gly-Cys(e)	C5H10N2O3S	0 extracellular
CHL[e]	Chloride(e)	Cl	-1 extracellular
CHO[e]	Choline	C5H14NO	1 extracellular
CHOR[e]	Chorismate	C10H8O6	-2 extracellular
CIT[e]	Citrate(e)	C6H5O7	-3 extracellular
CO1ALA[e]	Cob(I)alamin(e)	C62H88CoN13O14P	-1 extracellular
CO2[e]	CO2(e)	CO2	0 extracellular
CO2ALA[e]	Cob(II)alamin(e)	C62H87CoN13O14P	-1 extracellular
COBALT2[e]	Co2+	Co	2 extracellular
COBCE[e]	Cobamide coenzyme	C72H100CoN18O17P	0 extracellular
CPGI[e]	coproporphyrinogen I	C36H40N4O8	-4 extracellular
CRO4[e]	chromate(e)	O4Cr	-2 extracellular
CTETRAOSE[e]	cellotetraose	C24H42O21	0 extracellular
CU[e]	Copper2(e)	Cu	2 extracellular
CYS[e]	L-Cysteine	C3H7NO2S	0 extracellular
CYSTE[e]	L-Cysteate(e)	C3H6NO5S	-1 extracellular
CYTD[e]	Cytidine(e)	C9H13N3O5	0 extracellular
CYTS[e]	Cytosine(e)	C4H5N3O	0 extracellular
DA[e]	Deoxyadenosine(e)	C10H13N5O3	0 extracellular
DALA[e]	D-Alanine(e)	C3H7NO2	0 extracellular
DC[e]	Deoxycytidine(e)	C9H13N3O4	0 extracellular
DG[e]	Deoxyguanosine(e)	C10H13N5O4	0 extracellular
DGALAC[e]	D-Galactonate(e)	C6H11O7	-1 extracellular
DGLCNT[e]	2-dehydro-D-gluconate	C6H9O7	-1 extracellular
DGLDGLY[e]	diglucosyl-1,2 diacylglycerol	C4544H8488O1500	0 extracellular
DIN[e]	Deoxyinosine(e)	C10H12N4O4	0 extracellular
DMET[e]	D-Methionine(e)	C5H11NO2S	0 extracellular
DORO[e]	(S)-Dihydroorotate	C5H5N2O4	-1 extracellular
DPA[e]	Dipicolinate	C7H3NO4	-2 extracellular
DRIB[e]	Deoxyribose(e)	C5H10O4	0 extracellular
DSER[e]	D-Serine(e)	C3H7NO3	0 extracellular
DT[e]	Thymidine(e)	C10H14N2O5	0 extracellular
DU[e]	Deoxyuridine(e)	C9H12N2O5	0 extracellular
ERY[e]	D-erythrose	C4H8O4	0 extracellular
ETHAM[e]	Ethanolamine	C2H8NO	1 extracellular
ETOL[e]	Ethanol	C2H6O	0 extracellular
ETSUL[e]	ethanesulfonate(e)	C2H4O3S	-1 extracellular

FE2[e]	Fe2+(e)	Fe	2 extracellular
FE3[e]	Fe3+(e)	Fe	3 extracellular
FERCH[e]	Ferrichrome(e)	C27H45FeN9O12	0 extracellular
FMN[e]	FMN	C17H19N4O9P	-2 extracellular
FOL[e]	Folate	C19H17N7O6	-2 extracellular
FOR[e]	Formate(e)	CHO2	-1 extracellular
FRU[e]	D-Fructose(e)	C6H12O6	0 extracellular
FUM[e]	Fumarate(e)	C4H2O4	-2 extracellular
GA[e]	D-Galactosamine(e)	C6H14NO5	1 extracellular
GABA[e]	4-Aminobutanoate	C4H9NO2	0 extracellular
GAL[e]	D-Galactose(e)	C6H12O6	0 extracellular
GALUNT[e]	D-Galacturonate(e)	C6H9O7	-1 extracellular
GENTB[e]	gentiobiose	C12H22O11	0 extracellular
GL[e]	Glycerol(e)	C3H8O3	0 extracellular
GL3P[e]	sn-Glycerol 3-phosphate(e)	C3H7O6P	-2 extracellular
GLC[e]	D-Glucose(e)	C6H12O6	0 extracellular
GLCN[e]	D-Glucosamine(e)	C6H14NO5	1 extracellular
GLCNT[e]	D-Gluconic acid	C6H11O7	-1 extracellular
GLCUNT[e]	D-Glucuronate	C6H9O7	-1 extracellular
GLN[e]	L-Glutamine(e)	C5H10N2O3	0 extracellular
GLU[e]	L-Glutamate(e)	C5H8NO4	-1 extracellular
GLUCARATE[e]	D-glucarate	C6H8O8	-2 extracellular
GLY[e]	Glycine(e)	C2H5NO2	0 extracellular
GLYASN[e]	gly-asn-L(e)	C6H11N3O4	0 extracellular
GLYASP[e]	gly-asp-L(e)	C6H9N2O5	-1 extracellular
GLYB[e]	Glycine betaine	C5H11NO2	0 extracellular
GLYGLN[e]	Gly-Gln(e)	C7H13N3O4	0 extracellular
GLYGLU[e]	gly-glu-L(e)	C7H11N2O5	-1 extracellular
GLYLEU[e]	Gly-Leu(e)	C8H16N2O3	0 extracellular
GLYMET[e]	Gly-Met(e)	C7H14N2O3S	0 extracellular
GLYN[e]	Glycerone	C3H6O3	0 Bme_cytosol
GLYPHE[e]	Gly-Phe(e)	C11H14N2O3	0 extracellular
GLYPRO[e]	gly-pro-L(e)	C7H12N2O3	0 extracellular
GLYTYR[e]	Gly-Tyr(e)	C11H14N2O4	0 extracellular
GN[e]	Guanine	C5H5N5O	0 extracellular
GSN[e]	Guanosine	C10H13N5O5	0 extracellular
H[e]	H+(e)	H	1 extracellular
H2O[e]	H2O(e)	H2O	0 extracellular
HBENZ[e]	3-hydroxybenzoate	C7H5O3	-1 extracellular
HBUT[e]	2-Hydroxybutyrate	C4H7O3	-1 extracellular
HCYS[e]	L-Homocysteine	C4H9NO2S	0 extracellular
HDBUT[e]	(R)-3-Hydroxybutanoate(e)	C4H7O3	-1 extracellular
HEME[e]	Heme(e)	C34H30FeN4O4	-2 extracellular
HEXSUL[e]	hexanesulfonate(e)	C6H13O3S	-1 extracellular
HG2[e]	Mercury (+2)	Hg	2 extracellular
HIS[e]	L-Histidine	C6H9N3O2	0 extracellular
HNO2[e]	Nitrite(e)	NO2	-1 extracellular
HNO3[e]	Nitrate(e)	NO3	-1 extracellular
HPRO[e]	trans-4-Hydroxy-L-proline	C5H9NO3	0 extracellular
HYETHS[e]	2-Hydroxyethanesulfonate(e)	C2H5O4S	-1 extracellular
HYXN[e]	Hypoxanthine(e)	C5H4N4O	0 extracellular
ILE[e]	L-Isoleucine(e)	C6H13NO2	0 extracellular
INS[e]	Inosine(e)	C10H12N4O5	0 extracellular
K[e]	Potassium(e)	K	1 extracellular
LAC[e]	L-Lactate(e)	C3H5O3	-1 extracellular
LACTOSE[e]	Lactose(e)	C12H22O11	0 extracellular
LARAB[e]	L-Arabinose(e)	C5H10O5	0 extracellular
LEU[e]	L-Leucine(e)	C6H13NO2	0 extracellular
LGT[e]	(R)-S-Lactoylglutathione	C13H20N3O8S	-1 extracellular
LYS[e]	L-Lysine(e)	C6H15N2O2	1 extracellular
MAL[e]	(S)-Malate(e)	C4H4O5	-2 extracellular
MALN[e]	Malonate(e)	C3H2O4	-2 extracellular
MAN[e]	D-Mannose(e)	C6H12O6	0 extracellular

MDAPIM[e]	meso-2,6-Diaminoheptanedioate	C7H14N2O4	0 extracellular
MELI[e]	Melibiose(e)	C12H22O11	0 extracellular
MET[e]	L-Methionine(e)	C5H11NO2S	0 extracellular
METALA[e]	met-L-ala-L(e)	C8H16N2O3S	0 extracellular
METH[e]	Methanethiol	CH4S	0 extracellular
METSA[e]	Methanesulfonic acid(e)	CH3SO3	-1 extracellular
MG[e]	Magnesium(e)	Mg	2 extracellular
MLT[e]	Maltose(e)	C12H22O11	0 extracellular
MN2[e]	manganese	Mn	2 extracellular
MNT[e]	Mannitol(e)	C6H14O6	0 extracellular
MPYR[e]	Mercaptopyruvate	C3H3O3S	-1 extracellular
MYOI[e]	myo-Inositol	C6H12O6	0 extracellular
N2[e]	nitrogen	N2	0 extracellular
NA[e]	Sodium(e)	Na	1 extracellular
NAG[e]	N-Acetyl-D-glucosamine(e)	C8H15NO6	0 extracellular
NH3[e]	Ammonia	H4N	1 extracellular
NICA[e]	Nicotinate	C6H4NO2	-1 extracellular
NO[e]	Nitric oxide	NO	0 extracellular
O2[e]	O2(e)	O2	0 extracellular
OA[e]	Oxaloacetate	C4H2O5	-2 extracellular
OGT[e]	Glutathione disulfide	C20H30N6O12S2	-2 extracellular
OMP[e]	Orotidine 5'-phosphate	C10H10N2O11P	-3 extracellular
ORN[e]	L-Ornithine(e)	C5H13N2O2	1 extracellular
OROA[e]	Orotate	C5H3N2O4	-1 extracellular
PA[e]	1,2-diacyl-sn-glycerol 3-phosphate	C3344H6388O800P100	-200 extracellular
PABA[e]	4-Aminobenzoate	C7H6NO2	-1 extracellular
PDXAM[e]	pyridoxamine	C8H13N2O2	1 extracellular
PDXAM5P[e]	pyridoxamine 5'-phosphate	C8H12N2O5P	-1 extracellular
PDXL5P[e]	Pyridoxal phosphate	C8H8NO6P	-2 extracellular
PG[e]	Phosphatidylglycerol	C3644H7188O1000P100	-100 extracellular
PHE[e]	L-Phenylalanine	C9H11NO2	0 extracellular
PHPYR[e]	Phenylpyruvate	C9H7O3	-1 extracellular
PI[e]	Orthophosphate(e)	HO4P	-2 extracellular
PNTO[c]	Pantothenate	C9H16NO5	-1 Bme_cytosol
PNTO[e]	Pantothenate(e)	C9H16NO5	-1 extracellular
PPI[e]	Diphosphate(e)	HO7P2	-3 extracellular
PRO[e]	L-Proline(e)	C5H9NO2	0 extracellular
PTRSC[e]	Putrescine(e)	C4H14N2	2 extracellular
PYR[e]	Pyruvate	C3H3O3	-1 extracellular
RAF[e]	Raffinose	C18H32O16	0 extracellular
RGT[e]	Glutathione(e)	C10H16N3O6S	-1 extracellular
RIB[e]	D-Ribose(e)	C5H10O5	0 extracellular
RIBFLAV[e]	Riboflavin(e)	C17H20N4O6	0 extracellular
SALI[e]	Salicin(e)	C13H18O7	0 extracellular
SARC[e]	Sarcosine	C3H7NO2	0 extracellular
SER[e]	L-Serine(e)	C3H7NO3	0 extracellular
SLF[e]	Sulfate(e)	O4S	-2 extracellular
SOR[e]	L-sorbose(e)	C6H12O6	0 extracellular
SPRM[e]	Spermine	C10H30N4	4 extracellular
SPRMD[e]	Spermidine(e)	C7H22N3	3 extracellular
SUC[e]	Sucrose(e)	C12H22O11	0 extracellular
SUCC[e]	Succinate(e)	C4H4O4	-2 extracellular
SULA[e]	Sulfoacetate(e)	C2H2O5S	-2 extracellular
TAUR[e]	Taurine(e)	C2H7NO3S	0 extracellular
THJ[e]	Thiosulfate(e)	HO3S2	-1 extracellular
THME[e]	Thiamine(e)	C12H17N4OS	1 extracellular
THMP[e]	Thiamin monophosphate	C12H16N4O4PS	-1 extracellular
THR[e]	L-Threonine	C4H9NO3	0 extracellular
THY[e]	Thymine	C5H6N2O2	0 extracellular
TRE[e]	alpha,alpha-Trehalose(e)	C12H22O11	0 extracellular
TRP[e]	L-Tryptophan(e)	C11H12N2O2	0 extracellular
TUR[e]	turanose	C12H22O11	0 extracellular
TYR[e]	L-Tyrosine	C9H11NO3	0 extracellular

UDPG[e]	UDP-glucose	C15H22N2O17P2	-2 extracellular
UDPNAG[e]	UDP-N-acetyl-D-glucosamine	C17H25N3O17P2	-2 extracellular
UMP[e]	UDP-N-acetylmuramoyl-L-alanyl-D-glutamyl-meso-2,6-diisopentenyladenosine	C9H11N2O9P	-2 extracellular
UR[e]	Ureidoglycine	C3H7N3O3	0 extracellular
URA[c]	Uracil(c)	C4H4N2O2	0 cytosol
URA[e]	Uracil(e)	C4H4N2O2	0 extracellular
UREA[e]	Urea(e)	CH4N2O	0 extracellular
URI[e]	Uridine(e)	C9H12N2O6	0 extracellular
VAL[e]	L-Valine(e)	C5H11NO2	0 extracellular
VB12[e]	Vitamin B12(e)	C62H88CoN13O14P	1 extracellular
XAN[e]	Xanthine(e)	C5H4N4O2	0 extracellular
XYL[e]	D-Xylose(e)	C5H10O5	0 extracellular
ZN[e]	Zinc(e)	Zn	2 extracellular
LLAC[e]	(S)-lactic acid	C3H5O3	-1 extracellular
MI1P[e]	1D-myo-inositol 1-phosphate	C6H11O9P	-2 extracellular
MI3P[e]	1D-myo-inositol 3-phosphate	C6H11O9P	-2 extracellular
MI4P[e]	1D-myo-inositol 4-phosphate	C6H11O9P	-2 extracellular
GLYCYS[e]	glycylcysteine	C5H10N2O3S	0 extracellular
sysBiomass[e]	Biomass	x	0 extracellular
METHOL[e]	methanol	CH4O	0 extracellular
13PDG[c]	3-Phospho-D-glyceroyl phosphate	C3H4O10P2	-4 cytosol
23CAMP[c]	2',3'-Cyclic AMP	C10H11N5O6P	-1 Cytosol
23CGMP[c]	2',3'-Cyclic GMP	C10H11N5O7P	-1 cytosol
2MAHMP[c]	2-Methyl-4-amino-5-hydroxymethylpyrimidine diphosphate	C6H8N3O7P2	-3 cytosol
2ME4P[c]	2-C-Methyl-D-erythritol 4-phosphate	C5H11O7P	-2 cytosol
2MECDP[c]	2-C-Methyl-D-erythritol 2,4-cyclodiphosphate	C5H10O9P2	-2 cytosol
2MOP[c]	2-Methyl-3-oxopropanoate	C4H5O3	-1 cytosol
2P14NQ[c]	2-Phytyl-1,4-naphthoquinone	C30H44O2	0 cytosol
2P4C2ME[c]	4-CDP-2-C-methyl-D-erythritol 2-phosphate	C14H22N3O17P3	-4 cytosol
2PG[c]	2-Phospho-D-glycerate	C3H4O7P	-3 cytosol
33HMEOXOBUT[c]	3-Hydroxy-3-methyl-2-oxobutanoic acid	C5H7O4	-1 cytosol
3AMP[c]	3'-AMP	C10H12N5O7P	-2 Cytosol
3DDAH7P[c]	2-Dehydro-3-deoxy-D-arabino-heptonate 7-phosphate	C7H10O10P	-3 cytosol
3GMP[c]	Guanosine 3'-phosphate	C10H12N5O8P	-2 cytosol
3HBCOA[c]	(S)-3-Hydroxybutanoyl-CoA	C25H38N7O18P3S	-4 cytosol
3MOP[c]	(S)-3-Methyl-2-oxopentanoic acid	C6H9O3	-1 cytosol
3OA[c]	3-oxoadipate	C6H6O5	-2 cytosol
3OACOA[c]	3-Oxoadipyl-CoA	C27H37N7O20P3S	-5 cytosol
3OACOA[c]	3-oxoadipyl-CoA	C27H37N7O20P3S	-5 cytosol
3OAPCOA[c]	3-oxoadipyl-CoA	C27H37N7O20P3S	-5 cytosol
3OPP[c]	3-Oxopropanoate	C3H3O3	-1 cytosol
3PG[c]	3-Phospho-D-glycerate	C3H4O7P	-3 cytosol
3PG[e]	3-Phospho-D-glycerate	C3H4O7P	-3 extracellular
3PSER[c]	O-Phospho-L-serine	C3H6NO6P	-2 cytosol
3PSME[c]	5-O-(1-Carboxyvinyl)-3-phosphoshikimate	C10H9O10P	-4 cytosol
4C2ME[c]	4-(Cytidine 5'-diphospho)-2-C-methyl-D-erythritol	C14H23N3O14P2	-2 cytosol
4HGLUSA[c]	L-4-Hydroxyglutamate semialdehyde	C5H9NO4	0 cytosol
4HPP[c]	3-(4-Hydroxyphenyl)pyruvate	C9H7O4	-1 cytosol
4MOP[c]	4-Methyl-2-oxopentanoate	C6H9O3	-1 cytosol
4PPNCYS[c]	(R)-4'-Phosphopantothienoyl-L-cysteine	C12H20N2O9PS	-3 cytosol
4PPNTE[c]	Pantetheine 4'-phosphate	C11H21N2O7PS	-2 cytosol
4PPNTO[c]	D-4'-Phosphopantotheneate	C9H15NO8P	-3 cytosol
4R5AU[c]	4-(1-D-Ribitylamino)-5-amino-2,6-dihydroxyuridine	C9H16N4O6	0 cytosol
56DTHM[c]	dihydrothymine	C5H8N2O2	0 cytosol
5FTHF[c]	5-Formyltetrahydrofolate	C20H21N7O7	-2 cytosol
5FTHF[e]	5-Formyltetrahydrofolate	C20H21N7O7	-2 extracellular
5MC[c]	5-Methylcytosine	C5H7N3O	0 Cytosol
5MTA[c]	5'-Methylthioadenosine	C11H15N5O3S	0 cytosol
5ODHF2A[c]	5-oxo-4,5-dihydro-2-furylacetate	C6H5O4	-1 cytosol
A6RP5P[c]	5-Amino-6-(5'-phosphoribosylamino)uracil	C9H13N4O9P	-2 cytosol
A6RP5P2[c]	5-Amino-6-(5'-phosphoribitylamino)uracil	C9H15N4O9P	-2 cytosol
AACCOA[c]	Acetoacetyl-CoA	C25H36N7O18P3S	-4 cytosol
ABAL[c]	4-Aminobutanal	C4H10NO	1 cytosol

ABUT[c]	(S)-2-Aceto-2-hydroxybutanoate	C6H9O4	-1 cytosol
AC[c]	Acetate	C2H3O2	-1 cytosol
AC[e]	Acetate	C2H3O2	-1 extracellular
ACACP[c]	Acetyl-[ACP]	C13H23O8N2PRS	-1 cytosol
ACAL[c]	Acetaldehyde	C2H4O	0 cytosol
ACAMOXM[c]	N-Acetyl-L-2-amino-6-oxopimelate	C9H11NO6	-2 cytosol
ACCOA[c]	Acetyl-CoA	C23H34N7O17P3S	-4 cytosol
ACGAL6P[c]	N-Acetyl-D-galactosamine 6-phosphate	C8H14NO9P	-2 cytosol
ACGALA[e]	N-Acetyl-D-galactosamine(e)	C8H15NO6	0 extracellular
ACMALT[c]	Acetyl-maltose	C14H24O12	0 cytosol
ACMUM[e]	N-Acetylmuramate(e)	C11H18NO8	-1 extracellular
ACP[c]	Acyl-carrier protein	C11H21N2O7PRS	-1 cytosol
ACTAC[c]	Acetoacetate	C4H5O3	-1 cytosol
ACTAC[e]	Acetoacetate(e)	C4H5O3	-1 extracellular
ACTN[c]	(R)-Acetoin	C4H8O2	0 cytosol
ACTN[e]	(R)-Acetoin	C4H8O2	0 extracellular
ACTP[c]	Acetyl phosphate	C2H3O5P	-2 cytosol
AD[c]	Adenine	C5H5N5	0 cytosol
AD[e]	Adenine	C5H5N5	0 extracellular
ADCHOR[c]	4-Amino-4-deoxychorismate	C10H10NO5	-1 cytosol
ADCODIE[c]	Adenosyl cobyrate a,c diamide	C55H68CoN11O15	-4 cytosol
ADCOHEX[c]	Adenosyl cobyrate hexaamide	C55H76CoN15O11	0 cytosol
ADGLC[c]	6-O-acetyl-beta-D-glucose	C8H14O7	0 Cytosol
ADN[c]	Adenosine	C10H13N5O4	0 cytosol
ADN[e]	Adenosine(e)	C10H13N5O4	0 extracellular
ADOCBI[c]	Adenosyl cobinamide	C58H84CoN16O11	1 cytosol
ADOCBIP[c]	Adenosyl cobinamide phosphate	C58H83CoN16O14P	-1 cytosol
ADP[c]	ADP	C10H12N5O10P2	-3 cytosol
ADPGLC[c]	ADP-glucose	C16H23N5O15P2	-2 cytosol
ADPR[c]	ADP-ribose	C15H21N5O14P2	-2 Cytosol
AG[c]	L-Arogenate	C10H12NO5	-1 cytosol
AGDPCBI[c]	adenosine-GDP-cobinamide	C68H95CoN21O21P2	-1 cytosol
AGLY3P[c]	1-Acyl-sn-glycerol 3-phosphate	C1822H3544O700P100	-200 Cytosol
AGMT[c]	Agmatine	C5H16N4	2 cytosol
AHDT[c]	2-Amino-4-hydroxy-6-(erythro-1,2,3-trihydroxypropyl)d	C9H12N5O13P3	-4 cytosol
AHMD[c]	2-Amino-7,8-dihydro-4-hydroxy-6-(diphosphoxymethyl)	C7H8N5O8P2	-3 cytosol
AHHMP[c]	2-Amino-4-hydroxy-6-hydroxymethyl-7,8-dihydropteridi	C7H9N5O2	0 cytosol
AHM[c]	4-Amino-5-hydroxymethyl-2-methylpyrimidine	C6H9N3O	0 cytosol
AHM[e]	4-Amino-5-hydroxymethyl-2-methylpyrimidine	C6H9N3O	0 extracellular
AHMP[c]	4-Amino-2-methyl-5-phosphomethylpyrimidine	C6H8N3O4P	-2 cytosol
AIBUT[c]	L-3-Amino-isobutanoate	C4H9NO2	0 cytosol
AICAD[c]	5-Amino-4-imidazolecarboxamide	C4H6N4O	0 cytosol
AICAR[c]	1-(5'-Phosphoribosyl)-5-amino-4-imidazolecarboxamide	C9H13N4O8P	-2 cytosol
AIR[c]	Aminoimidazole ribotide	C8H13N3O7P	-1 cytosol
AKG[c]	2-Oxoglutarate	C5H4O5	-2 cytosol
AKG[e]	2-Oxoglutarate(e)	C5H4O5	-2 extracellular
AKP[c]	2-Dehydropantoate	C6H9O4	-1 cytosol
AL26DA[c]	N6-Acetyl-LL-2,6-diaminoheptanedioate	C9H15N2O5	-1 cytosol
ALA[c]	L-Alanine	C3H7NO2	0 cytosol
ALA[e]	L-Alanine(e)	C3H7NO2	0 extracellular
ALAALA[c]	D-Alanyl-D-alanine	C6H12N2O3	0 cytosol
ALAASP[c]	ala-L-asp-L	C7H11N2O5	-1 cytosol
ALAASP[e]	ala-L-asp-L(e)	C7H11N2O5	-1 extracellular
ALAGLN[c]	Ala-Gln	C8H15N3O4	0 cytosol
ALAGLN[e]	Ala-Gln(e)	C8H15N3O4	0 extracellular
ALAGLU[c]	ala-L-glu-L	C8H13N2O5	-1 cytosol
ALAGLU[e]	ala-L-glu-L(e)	C8H13N2O5	-1 extracellular
ALAGLY[c]	L-alanylglycine	C5H10N2O3	0 cytosol
ALAGLY[e]	L-alanylglycine(e)	C5H10N2O3	0 extracellular
ALAHIS[c]	Ala-His	C9H14N4O3	0 cytosol
ALAHIS[e]	Ala-His(e)	C9H14N4O3	0 extracellular
ALALEU[c]	Ala-Leu	C9H18N2O3	0 cytosol
ALALEU[e]	Ala-Leu(e)	C9H18N2O3	0 extracellular

ALATHR[c]	ala-L-Thr-L	C7H14N2O4	0 cytosol
ALATHR[e]	ala-L-Thr-L(e)	C7H14N2O4	0 extracellular
ACLAC[c]	(S)-2-Acetolactate	C5H7O4	-1 cytosol
ALLOIN[c]	Allantoin	C4H5N4O3	-1 cytosol
ALLOIN[e]	Allantoin(e)	C4H5N4O3	-1 extracellular
ALTRN[c]	D-Altronate	C6H11O7	-1 cytosol
AM3OXB[c]	L-2-Amino-3-oxobutanoic acid	C4H7NO3	0 cytosol
AMACR[c]	2-Aminoacrylate	C3H5NO2	0 cytosol
AMIEVUL[c]	5-Aminolevulinate	C5H9NO3	0 cytosol
AMIP[c]	D-1-Aminopropan-2-ol O-phosphate	C3H9NO4P	-1 cytosol
AMOB[c]	S-Adenosyl-4-methylthio-2-oxobutanoate	C15H19N5O6S	0 Cytosol
AMP[c]	AMP	C10H12N5O7P	-2 cytosol
AMPROTR[c]	beta-Aminopropionitrile	C3H7N2	1 cytosol
AMYLS1[c]	Amylose(n)	C42H70O35	0 cytosol
AMYLS2[c]	Amylose(n+1)	C48H80O40	0 cytosol
AN[c]	Anthranilate	C7H6NO2	-1 cytosol
ANIL[c]	Aniline	C6H7N	0 cytosol
AONA[c]	8-Amino-7-oxononanoate	C9H17NO3	0 Cytosol
APOACP[c]	apoprotein [acyl carrier protein]	RHO	0 Cytosol
APS[c]	Adenylyl sulfate	C10H12N5O10PS	-2 cytosol
ARAHE6P[c]	D-arabino-3-Hexulose 6-phosphate	C6H11O9P	-2 cytosol
ARBT6P[c]	Arbutin 6-phosphate	C12H15O10P	-2 cytosol
ARBUTIN[e]	Arbutin(e)	C12H16O7	0 extracellular
ARG[c]	L-Arginine	C6H15N4O2	1 cytosol
ARG[e]	L-Arginine(e)	C6H15N4O2	1 extracellular
ARGSUCC[c]	N-(L-Arginino)succinate	C10H17N4O6	-1 cytosol
ASELNT[c]	adenosine phosphoselenate	C10H13N5O10PSe	-1 cytosol
ASENA[c]	Arsenate	HAsO4	-2 cytosol
ASENA[e]	Arsenate	HAsO4	-2 extracellular
ASENI[c]	arsenite	H3AsO3	0 cytosol
ASENI[e]	arsenite	H3AsO3	0 extracellular
ASER[c]	O-Acetyl-L-serine	C5H9NO4	0 cytosol
ASN[c]	L-Asparagine	C4H8N2O3	0 cytosol
ASN[e]	L-Asparagine	C4H8N2O3	0 extracellular
ASP[c]	L-Aspartate	C4H6NO4	-1 cytosol
ASP[e]	L-Aspartate(e)	C4H6NO4	-1 extracellular
ASPRM[c]	N-Acetylspermidine	C9H23N3O	2 Cytosol
ASPSA[c]	L-Aspartate 4-semialdehyde	C4H7NO3	0 cytosol
ASUC[c]	N6-(1,2-Dicarboxyethyl)-AMP	C14H14N5O11P	-4 cytosol
ATHEDI[c]	all-trans-Heptaprenyl diphosphate	C35H57O7P2	-3 cytosol
ATP[c]	ATP	C10H12N5O13P3	-4 cytosol
ATTI[c]	Allantoate	C4H7N4O4	-1 cytosol
BA[c]	benzoate	C7H5O2	-1 Cytosol
bALA[c]	beta-Alanine	C3H7NO2	0 cytosol
BASP[c]	4-Phospho-L-aspartate	C4H6NO7P	-2 cytosol
BDOH[c]	(R,R)-2,3-Butanediol	C4H10O2	0 Cytosol
BDOH[e]	(R,R)-2,3-Butanediol	C4H10O2	0 extracellular
BENDL[c]	p-Benzenediol	C6H6O2	0 cytosol
BENZGLY[c]	N-benzoylglycinate	C9H8NO3	-1 Cytosol
BETALD[c]	Betaine aldehyde	C5H12NO	1 Cytosol
bLYS[c]	(3S)-3,6-Diaminohexanoate	C6H15N2O2	1 Cytosol
BT[c]	Biotin	C10H15N2O3S	-1 cytosol
BT[e]	Biotin(e)	C10H15N2O3S	-1 extracellular
BUAC[c]	Butanoic acid	C4H7O2	-1 cytosol
BUAC[e]	Butanoic acid(e)	C4H7O2	-1 extracellular
BUAC[c]	Butanoic acid(e)	C4H7O2	-1 cytosol
BUAL[c]	Butanal	C4H8O	0 cytosol
BUOL[c]	1-Butanol	C4H10O	0 cytosol
BUTP[c]	Butanoylphosphate	C4H7O5P	-2 cytosol
BUTSUL[c]	butanesulfonate	C4H8O3S	-1 cytosol
BUTSUL[e]	butanesulfonate(e)	C4H8O3S	-1 extracellular
C100ACP[c]	Decanoyl-[acp]	C21H39N2O8PRS	-1 cytosol
C100COA[c]	Decanoyl-CoA	C31H50N7O17P3S	-4 cytosol

C10DCOA[c]	trans-Dec-2-enoyl-CoA	C31H48N7O17P3S	-4 cytosol
C10COA[c]	3-Oxodecanoyl-CoA	C31H48N7O18P3S	-4 cytosol
C120ACP[c]	Dodecanoyl-[acyl-carrier protein]	C23H43N2O8PRS	-1 cytosol
C120COA[c]	Lauroyl-CoA	C33H54N7O17P3S	-4 cytosol
C120COA[c]	3-Oxododecanoyl-CoA	C33H52N7O18P3S	-4 cytosol
C140ACP[c]	Tetradecanoyl-[acp]	C25H47N2O8PRS	-1 cytosol
C14DCOA[c]	trans-Tetradec-2-enoyl-CoA	C35H56N7O17P3S	-4 cytosol
C140COA[c]	3-Oxotetradecanoyl-CoA	C35H56N7O18P3S	-4 cytosol
C150ACP[c]	Pentadecanoyl-[acp]	C26H49N2O8PRS	-1 cytosol
C160ACP[c]	Hexadecanoyl-[acp]	C27H51N2O8PRS	-1 cytosol
C16DCOA[c]	trans-Hexadec-2-enoyl-CoA	C37H60N7O17P3S	-4 cytosol
C160IACP[c]	IsoC160ACP	C27H51N2O8PRS	-1 cytosol
C160COA[c]	3-Oxopalmitoyl-CoA	C37H60N7O18P3S	-4 cytosol
C170ACP[c]	Heptadecanoyl-[acp]	C28H53N2O8PRS	-1 cytosol
C180ACP[c]	Stearoyl-[acyl-carrier protein]	C29H55N2O8PRS	-1 cytosol
C40COA[c]	Butanoyl-CoA	C25H38N7O17P3S	-4 cytosol
C60COA[c]	Hexanoyl-CoA	C27H42N7O17P3S	-4 cytosol
C6DCOA[c]	trans-Hex-2-enoyl-CoA	C27H40N7O17P3S	-4 cytosol
C80ACP[c]	octanoyl-[acyl-carrier protein]	C19H35N2O8PRS	-1 cytosol
C80COA[c]	Octanoyl-CoA	C29H46N7O17P3S	-4 cytosol
C8DCOA[c]	trans-Oct-2-enoyl-CoA	C29H44N7O17P3S	-4 cytosol
C80COA[c]	3-Oxoctanoyl-CoA	C29H44N7O18P3S	-4 cytosol
CA[c]	Calcium	Ca	2 cytosol
CA[e]	Calcium(e)	Ca	2 extracellular
CAALA[c]	3-Ureidopropionate	C4H7N2O3	-1 cytosol
CAASP[c]	N-Carbamoyl-L-aspartate	C5H6N2O5	-2 cytosol
CAIR[c]	1-(5-Phospho-D-ribosyl)-5-amino-4-imidazolecarboxylat	C9H11N3O9P	-3 cytosol
CAP[c]	Carbamoyl phosphate	CH2NO5P	-2 cytosol
CBHCAP[c]	(2R,3S)-3-Isopropylmalate	C7H10O5	-2 cytosol
CBII[c]	cobinamide	C48H72N11O8Co	-1 Cytosol
CCL[c]	Catechol	C6H6O2	0 cytosol
CD2[c]	Cd2+[Cadmium	Cd2	2 cytosol
CD2[e]	Cd2+[Cadmium	Cd2	2 extracellular
CDP[c]	CDP	C9H12N3O11P2	-3 cytosol
CDPDG[c]	CDP-diacylglycerol	C4244H7588N300O1500P200	-200 cytosol
CDPGL[c]	CDP-glycerol	C12H19N3O13P2	-2 Cytosol
CDPGL[e]	CDP-glycerol	C12H19N3O13P2	-2 extracellular
CELLOB6P[c]	cellobiose 6-phosphate	C12H21O14P	-2 cytosol
CELLOB[e]	cellobiose	C12H22O11	0 extracellular
CELLOT[c]	cellotriose	C18H32O16	0 cytosol
CELLOT[e]	cellotriose	C18H32O16	0 extracellular
CGLY[c]	Cys-Gly	C5H10N2O3S	0 cytosol
CGLY[e]	Gly-Cys(e)	C5H10N2O3S	0 extracellular
CHLI[c]	Chloride	Cl	-1 cytosol
CHLI[e]	Chloride(e)	Cl	-1 extracellular
CHO[c]	Choline	C5H14NO	1 cytosol
CHO[e]	Choline	C5H14NO	1 extracellular
CHOR[c]	Chorismate	C10H8O6	-2 cytosol
CHOR[e]	Chorismate	C10H8O6	-2 extracellular
CIT[c]	Citrate	C6H5O7	-3 cytosol
CIT[e]	Citrate(e)	C6H5O7	-3 extracellular
CITR[c]	L-Citrulline	C6H13N3O3	0 cytosol
CL[c]	Cardiolipin	C6988H13576O1700P200	-200 cytosol
CMP[c]	CMP	C9H12N3O8P	-2 cytosol
CO1ALA[e]	Cob(I)alamin(e)	C62H88CoN13O14P	-1 extracellular
CO2[c]	CO2	CO2	0 cytosol
CO2[e]	CO2(e)	CO2	0 extracellular
CO2ALA[e]	Cob(II)alamin(e)	C62H87CoN13O14P	-1 extracellular
COA[c]	CoA	C21H32N7O16P3S	-4 cytosol
COB1DIDE[c]	Cob(I)yrinate a,c diamide	C45H57CoN6O12	-4 cytosol
COB2DIDE[c]	Cob(II)yrinate a,c diamide	C45H56CoN6O12	-4 cytosol
COBALT2[c]	Co2+	Co	2 cytosol
COBALT2[e]	Co2+(e)	Co	2 extracellular

COBCE[c]	Cobamide coenzyme	C72H100CoN18O17P	0 cytosol
COBCE[e]	Cobamide coenzyme	C72H100CoN18O17P	0 extracellular
COBFIII[c]	Cobalt-factor III	C43H38CoN4O16	-8 cytosol
COBY[c]	Cobyrinate	C45H52CoN4O14	-6 cytosol
CODSUL[c]	CoA-disulfide	C42H62N14O32P6S2	-8 cytosol
COHY6[c]	Cobalt-dihydro-precorrin 6	C44H47CoN4O16	-7 cytosol
COPR3[c]	Cobalt-precorrin 3	C43H41CoN4O16	-7 cytosol
COPR4[c]	Cobalt-precorrin 4	C44H45CoN4O16	-5 cytosol
COPR5[c]	Cobalt-precorrin 5	C45H46CoN4O16	-6 cytosol
COPR5A[c]	Cobalt-precorrin 5A	C45H45CoN4O16	-7 cytosol
COPR5B[c]	Cobalt-precorrin 5B	C43H43CoN4O16	-7 cytosol
COPR6[c]	Cobalt-precorrin 6	C44H45CoN4O16	-7 cytosol
COPR7[c]	Cobalt-precorrin 7	C45H49CoN4O16	-7 cytosol
COPR8[c]	Cobalt-precorrin 8	C45H52CoN4O14	-6 cytosol
COSIR[c]	Cobalt-sirohydrochlorin	C42H36CoN4O16	-8 cytosol
CPAD5P[c]	1-(2-Carboxyphenylamino)-1-deoxy-D-ribose 5-phosph	C12H13NO9P	-3 cytosol
CPGI[c]	coproporphyrinogen I	C36H40N4O8	-4 Cytosol
CPGIII[c]	Coproporphyrinogen III	C36H40N4O8	-4 cytosol
CRO4[c]	chromate	O4Cr	-2 cytosol
CRO4[e]	chromate(e)	O4Cr	-2 extracellular
CRONYLCOA[c]	Crotonoyl-CoA	C25H36N7O17P3S	-4 cytosol
CTETRAOSE[c]	cellotetraose	C24H42O21	0 cytosol
CTETRAOSE[e]	cellotetraose	C24H42O21	0 extracellular
CTP[c]	CTP	C9H12N3O14P3	-4 cytosol
CU[e]	Copper2(e)	Cu	2 extracellular
CYAL[c]	L-3-cyanoalanine	C4H6N2O2	0 cytosol
CYS[c]	L-Cysteine	C3H7NO2S	0 cytosol
CYS[e]	L-Cysteine	C3H7NO2S	0 extracellular
CYSD[c]	D-Cysteine	C3H7NO2S	0 cytosol
CYSTE[c]	L-Cysteate	C3H6NO5S	-1 cytosol
CYSTE[e]	L-Cysteate(e)	C3H6NO5S	-1 extracellular
CYTD[c]	Cytidine	C9H13N3O5	0 cytosol
CYTD[e]	Cytidine(e)	C9H13N3O5	0 extracellular
CYTS[c]	Cytosine	C4H5N3O	0 cytosol
CYTS[e]	Cytosine(e)	C4H5N3O	0 extracellular
D5MPO[c]	1,2-Dihydroxy-5-(methylthio)pent-1-en-3-one	C6H10O3S	0 cytosol
D6PGC[c]	6-Phospho-D-gluconate	C6H10O10P	-3 cytosol
D6PGL[c]	D-Glucono-1,5-lactone 6-phosphate	C6H9O9P	-2 cytosol
D6RP5P[c]	2,5-Diamino-6-(5-phospho-D-ribosylamino)pyrimidin-4(	C9H14N5O8P	-2 cytosol
D8RL[c]	6,7-Dimethyl-8-(D-ribityl)lumazine	C13H17N4O6	-1 cytosol
DA[c]	Deoxyadenosine	C10H13N5O3	0 cytosol
DA[e]	Deoxyadenosine(e)	C10H13N5O3	0 extracellular
DAD5[c]	5'-Deoxyadenosine	C10H13N5O3	0 cytosol
DADP[c]	dADP	C10H12N5O9P2	-3 cytosol
DAGL[c]	1,2-Diacyl-sn-glycerol	C3344H6488O500	0 cytosol
DALA[c]	D-Alanine	C3H7NO2	0 cytosol
DALA[e]	D-Alanine(e)	C3H7NO2	0 extracellular
DAMP[e]	dAMP	C10H12N5O6P	-2 extracellular
DAMP[c]	dAMP	C10H12N5O6P	-2 cytosol
DANNA[c]	7,8-Diaminononanoate	C9H21N2O2	1 cytosol
DAPIM[c]	LL-2,6-Diaminoheptanedioate	C7H14N2O4	0 cytosol
DASP[c]	D-Aspartate	C4H6NO4	-1 cytosol
DATP[e]	dATP	C10H12N5O12P3	-4 extracellular
DATP[c]	dATP	C10H12N5O12P3	-4 cytosol
DB4P[c]	3,4-Dihydroxy-2-butanone 4-phosphate	C4H7O6P	-2 cytosol
DC[c]	Deoxycytidine	C9H13N3O4	0 cytosol
DC[e]	Deoxycytidine(e)	C9H13N3O4	0 extracellular
DCDP[c]	dCDP	C9H12N3O10P2	-3 cytosol
DCMP[c]	dCMP	C9H12N3O7P	-2 cytosol
DCTP[e]	dCTP	C9H12N3O13P3	-4 extracellular
DEKEGLU[c]	2-Deoxy-5-keto-D-gluconic acid	C6H9O6	-1 cytosol
DEKG6P[c]	2-Deoxy-5-keto-D-gluconic acid 6-phosphate	C6H8O9P	-3 cytosol
DEX[c]	Dextrin(n)	C24H40O20	0 cytosol

DEX1[c]	Dextrin(n-1)	C12H20O10	0 cytosol
DEZ[c]	4-Phospho-D-erythronate	C4H6O8P	-3 cytosol
DG[c]	Deoxyguanosine	C10H13N5O4	0 cytosol
DG[e]	Deoxyguanosine(e)	C10H13N5O4	0 extracellular
DGALAC[c]	D-Galactonate	C6H11O7	-1 cytosol
DGALAC[e]	D-Galactonate(e)	C6H11O7	-1 extracellular
DGALCTR[c]	D-Galactarate	C6H8O8	-2 Cytosol
DGALGLY[c]	3-beta-D-Galactosyl-sn-glycerol	C9H18O8	0 cytosol
DGDP[c]	dGDP	C10H12N5O10P2	-3 cytosol
DGLCNT[c]	2-dehydro-D-gluconate	C6H9O7	-1 cytosol
DGLCNT[e]	2-dehydro-D-gluconate	C6H9O7	-1 extracellular
DGLDGLY[c]	diglucosyl-1,2 diacylglycerol	C4544H8488O1500	0 Cytosol
DGLDGLY[e]	diglucosyl-1,2 diacylglycerol	C4544H8488O1500	0 extracellular
DGLN[c]	D-Glutamine	C5H10N2O3	0 cytosol
DGLU[c]	D-Glutamate	C5H8NO4	-1 cytosol
DGMP[e]	dGMP	C10H12N5O7P	-2 extracellular
DGMP[c]	dGMP	C10H12N5O7P	-2 cytosol
DGTP[e]	dGTP	C10H12N5O13P3	-4 extracellular
DGTP[c]	dGTP	C10H12N5O13P3	-4 cytosol
DH4DGLC[c]	5-dehydro-4-deoxy-D-glucarate	C6H6O7	-2 cytosol
DHBENZ[c]	2,5-dihydroxybenzoate	C7H5O4	-1 Cytosol
DHDP[c]	L-2,3-Dihydrodipicolinate	C7H5NO4	-2 cytosol
DHF[c]	Dihydro folate	C19H19N7O6	-2 cytosol
DHFUAC[c]	5-oxo-2,5-dihydro-2-furylacetate	C6H5O4	-1 cytosol
DHMP[c]	(R)-2,3-Dihydroxy-3-methylpentanoate	C6H11O4	-1 cytosol
DHMVA[c]	(R)-2,3-Dihydroxy-3-methylbutanoate	C5H9O4	-1 cytosol
DHN[c]	1,4-Dihydroxy-2-naphthoate	C11H7O4	-1 cytosol
DHNTCOA[c]	1,4-Dihydroxy-2-naphthoyl-CoA	C32H38N7O19P3S	-4 cytosol
DHP[c]	7,8-Dihydroneopterin	C9H13N5O4	0 cytosol
DHPT[c]	Dihydropteroate	C14H13N6O3	-1 cytosol
DHSK[c]	3-Dehydroshikimate	C7H7O5	-1 cytosol
DIAMIBU[c]	L-2,4-Diaminobutanoate	C4H11N2O2	1 cytosol
DIANTP[c]	2,5-Diaminopyrimidine nucleoside triphosphate	C9H14N5O14P3	-4 cytosol
DIATRPAO[c]	2,5-Diamino-6-(5'-triphosphoryl-3',4'-trihydroxy-2'-oxop	C9H14N5O14P3	-4 cytosol
DIDP[c]	dIDP	C10H11N4O10P2	-3 cytosol
DIHB[c]	(2S,3S)-2,3-Dihydro-2,3-dihydroxybenzoate	C7H7O4	-1 cytosol
DIHURA[c]	5,6-Dihydrouracil	C4H6N2O2	0 cytosol
DIHY23DIO[c]	(4S)-4,5-Dihydroxypentan-2,3-dione	C5H8O4	0 cytosol
DIHYDROLIPOYLPROTEIN[c]	Dihydrolipoylprotein	C8H16NOS2R	0 cytosol
DIMBEN[c]	Dimethylbenzimidazole	C9H10N2	0 cytosol
DIMGF[c]	D-erythro-1-(Imidazol-4-yl)glycerol 3-phosphate	C6H9N2O6P	-2 cytosol
DIMP[c]	2'-Deoxyinosine 5'-phosphate	C10H11N4O7P	-2 cytosol
DIN[c]	Deoxyinosine	C10H12N4O4	0 cytosol
DIN[e]	Deoxyinosine(e)	C10H12N4O4	0 extracellular
DIOXPEN[c]	2,5-Dioxopentanoate	C5H5O4	-1 cytosol
DIPLO[c]	Diplopterol	C30H52O	0 cytosol
DIPNE[c]	Diploptene	C30H50	0 cytosol
DIPYRCAR[c]	3,4-Dihydro-2H-Pyrrole-2-carboxylate	C5H6NO2	-1 cytosol
DITP[c]	dITP	C10H11N4O13P3	-4 cytosol
DMET[c]	D-Methionine	C5H11NO2S	0 cytosol
DMET[e]	D-Methionine(e)	C5H11NO2S	0 extracellular
DMKH[c]	2-demethylmenaquinol-8	C50H72O2	0 cytosol
DMPF[c]	Dimethylallyl diphosphate	C5H9O7P2	-3 cytosol
DMTP1P[c]	2,3-Diketo-5-methylthiopentyl-1-phosphate	C6H9O6PS	-2 cytosol
DNAD[c]	Deamino-NAD+	C21H24N6O15P2	-2 cytosol
DOROA[c]	(S)-Dihydroorotate	C5H5N2O4	-1 cytosol
DOROA[e]	(S)-Dihydroorotate	C5H5N2O4	-1 extracellular
DPA[c]	Dipicolinate	C7H3NO4	-2 Cytosol
DPCOA[c]	Dephospho-CoA	C21H33N7O13P2S	-2 cytosol
DPHE[c]	D-Phenylalanine	C9H11NO2	0 cytosol
DQT[c]	3-Dehydroquinate	C7H9O6	-1 cytosol
DR1P[c]	2-Deoxy-D-ribose 1-phosphate	C5H9O7P	-2 cytosol
DR5P[c]	2-Deoxy-D-ribose 5-phosphate	C5H9O7P	-2 cytosol

DRIB[c]	Deoxyribose	C5H10O4	0 cytosol
DRIB[e]	Deoxyribose(e)	C5H10O4	0 extracellular
DSAM[c]	S-Adenosylmethioninamine	C14H24N6O3S	2 cytosol
DSER[c]	D-Serine	C3H7NO3	0 cytosol
DSER[e]	D-Serine(e)	C3H7NO3	0 extracellular
DT[c]	Thymidine	C10H14N2O5	0 cytosol
DT[e]	Thymidine(e)	C10H14N2O5	0 extracellular
DTB[c]	Dethiobiotin	C10H17N2O3	-1 cytosol
DTD[c]	dTDP	C10H13N2O11P2	-3 cytosol
DTMP[c]	dTMP	C10H13N2O8P	-2 cytosol
DTTP[e]	dTTP	C10H13N2O14P3	-4 cytosol
DTTP[c]	dTTP	C10H13N2O14P3	-4 cytosol
DU[c]	Deoxyuridine	C9H12N2O5	0 cytosol
DU[e]	Deoxyuridine(e)	C9H12N2O5	0 extracellular
DUDP[c]	dUDP	C9H11N2O11P2	-3 cytosol
DUMP[c]	dUMP	C9H11N2O8P	-2 cytosol
DUTP[c]	dUTP	C9H11N2O14P3	-4 cytosol
DX5P[c]	1-Deoxy-D-xylulose 5-phosphate	C5H9O7P	-2 cytosol
E4HGLU[c]	L-erythro-4-Hydroxyglutamate	C5H8NO5	-1 cytosol
E4P[c]	D-Erythrose 4-phosphate	C4H7O7P	-2 cytosol
EPIBIO[c]	Epimelibiose	C12H22O11	0 cytosol
ERY[c]	D-erythrose	C4H8O4	0 cytosol
ERY[e]	D-erythrose	C4H8O4	0 extracellular
ERY3MEM[c]	D-erythro-3-Methylmalate	C5H6O5	-2 cytosol
ETHAM[c]	Ethanolamine	C2H8NO	1 cytosol
ETHAM[e]	Ethanolamine	C2H8NO	1 extracellular
ETOL[c]	Ethanol	C2H6O	0 cytosol
ETOL[e]	Ethanol	C2H6O	0 extracellular
ETR[c]	tRNA(Glu)	C20H29N5O16P2R2	0 cytosol
ETSUL[c]	ethanesulfonate	C2H4O3S	-1 cytosol
ETSUL[e]	ethanesulfonate(e)	C2H4O3S	-1 extracellular
F1P[c]	D-Fructose 1-phosphate	C6H11O9P	-2 cytosol
F6P[c]	D-Fructose 6-phosphate	C6H11O9P	-2 cytosol
FA6COA[c]	Iso-C16:0 CoA	C37H62N7O17P3S	-4 Cytosol
FAD[c]	FAD	C27H31N9O15P2	-2 cytosol
FADH2[c]	FADH2	C27H33N9O15P2	-2 cytosol
FALD[c]	Formaldehyde	CH2O	0 cytosol
FDP[c]	D-Fructose 1,6-bisphosphate	C6H10O12P2	-4 cytosol
FE2[c]	Fe2+	Fe	2 cytosol
FE2[e]	Fe2+(e)	Fe	2 extracellular
FE3[c]	Fe3+	Fe	3 cytosol
FE3[e]	Fe3+(e)	Fe	3 extracellular
FERCH[c]	Ferrichrome	C27H45FeN9O12	0 cytosol
FERCH[e]	Ferrichrome(e)	C27H45FeN9O12	0 extracellular
FERI[c]	ferricytochrome c	C42H44FeN8O8S2R4	3 cytosol
FERO[c]	ferrocyclochrome c	C42H44FeN8O8S2R4	2 cytosol
FGAM[c]	2-(Formamido)-N1-(5'-phosphoribosyl)acetamidine	C8H15N3O8P	-1 cytosol
FGAR[c]	5'-Phosphoribosyl-N-formylglycinamide	C8H13N2O9P	-2 cytosol
FKYN[c]	L-Formylkynurenine	C11H12N2O4	0 cytosol
FMN[c]	FMN	C17H19N4O9P	-2 cytosol
FMN[e]	FMN	C17H19N4O9P	-2 extracellular
FMNH2[c]	FMNH2	C17H21N4O9P	-2 cytosol
FOL[c]	Folate	C19H17N7O6	-2 cytosol
FOL[e]	Folate	C19H17N7O6	-2 extracellular
FOR[c]	Formate	CHO2	-1 cytosol
FOR[e]	Formate(e)	CHO2	-1 extracellular
FORGLU[c]	N-Formimino-L-glutamate	C6H9N2O4	-1 cytosol
FORL[c]	Formylanthranilate	C8H6NO3	-1 cytosol
FORMIE[c]	Formamide	CH3NO	0 cytosol
FPYNT[c]	Formamidopyrimidine nucleoside triphosphate	C10H15N5O15P3	-3 cytosol
FPYR[c]	3-fumarylpyruvate	C7H4O6	-2 Cytosol
FRDP[c]	trans,trans-Farnesyl diphosphate	C15H25O7P2	-3 cytosol
FRU[c]	D-Fructose	C6H12O6	0 cytosol

FRU[e]	D-Fructose(e)	C6H12O6	0 extracellular
FRUTN[c]	D-Fructuronate	C6H9O7	-1 cytosol
FTHF[c]	10-Formyltetrahydrofolate	C20H21N7O7	-2 cytosol
FUM[c]	Fumarate	C4H2O4	-2 cytosol
FUM[e]	Fumarate(e)	C4H2O4	-2 extracellular
G[e]	D-Glycerate	C3H5O4	-1 extracellular
G[c]	D-Glycerate	C3H5O4	-1 cytosol
G1P[c]	D-Glucose 1-phosphate	C6H11O9P	-2 cytosol
G6P[c]	D-Glucose 6-phosphate	C6H11O9P	-2 cytosol
GA[e]	D-Galactosamine(e)	C6H14NO5	1 extracellular
GA1P[c]	alpha-D-Glucosamine 1-phosphate	C6H13NO8P	-1 cytosol
GA6P[c]	D-Glucosamine 6-phosphate	C6H13NO8P	-1 cytosol
GABA[c]	4-Aminobutanoate	C4H9NO2	0 cytosol
GABA[e]	4-Aminobutanoate	C4H9NO2	0 extracellular
GAL[c]	D-Galactose	C6H12O6	0 cytosol
GAL[e]	D-Galactose(e)	C6H12O6	0 extracellular
GAL1P[c]	alpha-D-Galactose 1-phosphate	C6H11O9P	-2 cytosol
GAL6P[c]	D-Galactose 6-phosphate	C6H11NO8P	-2 cytosol
GALAC[c]	L-Galactono-1,4-lactone	C6H10O6	0 cytosol
GALOL[c]	alpha-D-galactosyl-(1->3)-1D-myo-inositol	C12H22O11	0 cytosol
GALUNT[c]	D-Galacturonate	C6H9O7	-1 cytosol
GALUNT[e]	D-Galacturonate(e)	C6H9O7	-1 extracellular
GAPPN[c]	gamma-glutamyl-beta-aminopropionitrile	C8H13N3O3	0 cytosol
GAR[c]	5'-Phosphoribosylglycinamide	C7H14N2O8P	-1 cytosol
GCALA[c]	gamma-Glutamyl-beta-cyanoalanine	C9H12N3O5	-1 cytosol
GDP[c]	GDP	C10H12N5O11P2	-3 cytosol
GDPMAN[c]	GDP-mannose	C16H23N5O16P2	-2 cytosol
GENTB[c]	gentiobiose	C12H22O11	0 cytosol
GENTB[e]	gentiobiose	C12H22O11	0 extracellular
GERGDP[c]	Geranylgeranyl diphosphate	C20H33O7P2	-3 cytosol
GL[c]	Glycerol	C3H8O3	0 cytosol
GL[e]	Glycerol(e)	C3H8O3	0 extracellular
GL3P[c]	sn-Glycerol 3-phosphate	C3H7O6P	-2 cytosol
GL3P[e]	sn-Glycerol 3-phosphate(e)	C3H7O6P	-2 extracellular
GLAL[c]	Glycolaldehyde	C2H4O2	0 cytosol
GLC[c]	D-Glucose	C6H12O6	0 cytosol
GLC[e]	D-Glucose(e)	C6H12O6	0 extracellular
GLCN[e]	D-Glucosamine(e)	C6H14NO5	1 extracellular
GLCN[c]	D-Glucosamine	C6H14NO5	1 cytosol
GLCN15LAC[c]	D-Glucono-1,5-lactone	C6H10O6	0 cytosol
GLCNT[c]	D-Gluconic acid	C6H11O7	-1 cytosol
GLCNT[e]	D-Gluconic acid	C6H11O7	-1 extracellular
GLCUNT[c]	D-Glucuronate	C6H9O7	-1 cytosol
GLCUNT[e]	D-Glucuronate	C6H9O7	-1 extracellular
GLN[c]	L-Glutamine	C5H10N2O3	0 cytosol
GLN[e]	L-Glutamine(e)	C5H10N2O3	0 extracellular
GLU[c]	L-Glutamate	C5H8NO4	-1 cytosol
GLU[e]	L-Glutamate(e)	C5H8NO4	-1 extracellular
GLU5P[c]	L-Glutamyl 5-phosphate	C5H8NO7P	-2 cytosol
GLUAC[c]	D-Glucuronolactone	C6H8O6	0 cytosol
GLUCARATE[c]	D-glucarate	C6H8O8	-2 cytosol
GLUGSAL[c]	L-Glutamate 5-semialdehyde	C5H9NO3	0 cytosol
GLX[c]	Glyoxylate	C2HO3	-1 cytosol
GLY[c]	Glycine	C2H5NO2	0 cytosol
GLY[e]	Glycine(e)	C2H5NO2	0 extracellular
GLYA[c]	Glycolate	C2H3O3	-1 cytosol
GLYAL[c]	D-Glyceraldehyde	C3H6O3	0 cytosol
GLYASN[c]	gly-asn-L	C6H11N3O4	0 cytosol
GLYASN[e]	gly-asn-L(e)	C6H11N3O4	0 extracellular
GLYASP[c]	gly-asp-L	C6H9N2O5	-1 cytosol
GLYASP[e]	gly-asp-L(e)	C6H9N2O5	-1 extracellular
GLYB[c]	Glycine betaine	C5H11NO2	0 Cytosol
GLYB[e]	Glycine betaine	C5H11NO2	0 extracellular

G3PC[c]	sn-glycero-3-Phosphocholine	C8H20NO6P	0 cytosol
G3PE[c]	sn-Glycero-3-phosphoethanolamine	C5H14NO6P	0 cytosol
GLYCOGEN[c]	glycogen	C6H10O5	0 Cytosol
GLYGLN[c]	Gly-Gln	C7H13N3O4	0 cytosol
GLYGLN[e]	Gly-Gln(e)	C7H13N3O4	0 extracellular
GLYGLU[c]	gly-glu-L	C7H11N2O5	-1 cytosol
GLYGLU[e]	gly-glu-L(e)	C7H11N2O5	-1 extracellular
GLYLEU[c]	Gly-Leu	C8H16N2O3	0 cytosol
GLYLEU[e]	Gly-Leu(e)	C8H16N2O3	0 extracellular
GLYMET[c]	Gly-Met	C7H14N2O3S	0 cytosol
GLYMET[e]	Gly-Met(e)	C7H14N2O3S	0 extracellular
GLYN[c]	Glycerone	C3H6O3	0 cytosol
GLYPHE[c]	Gly-Phe	C11H14N2O3	0 cytosol
GLYPHE[e]	Gly-Phe(e)	C11H14N2O3	0 extracellular
GLYPRO[c]	gly-pro-L	C7H12N2O3	0 cytosol
GLYPRO[e]	gly-pro-L(e)	C7H12N2O3	0 extracellular
GLYTYR[c]	Gly-Tyr	C11H14N2O4	0 cytosol
GLYTYR[e]	Gly-Tyr(e)	C11H14N2O4	0 extracellular
GMP[c]	GMP	C10H12N5O8P	-2 cytosol
GN[c]	Guanine	C5H5N5O	0 cytosol
GN[e]	Guanine	C5H5N5O	0 extracellular
GRDP[c]	Geranyl diphosphate	C10H17O7P2	-3 cytosol
GSN[c]	Guanosine	C10H13N5O5	0 cytosol
GSN[e]	Guanosine	C10H13N5O5	0 extracellular
GSPRMD[c]	glutathionylspermidine	C17H36N6O5S	-2 cytosol
GTA[c]	glycerol teichoic acid (n=45), unlinked, unsubstituted	C151H297N2O238P46	-45 Cytosol
GTA2[c]	glycerol teichoic acid (n=45), unlinked, D-ala substituted	C286H612N47O328P46	-45 Cytosol
GTA3[c]	glycerol teichoic acid (n=45), unlinked, glucose substituti	C421H749N2O464P46	-45 Cytosol
GTP[c]	GTP	C10H12N5O14P3	-4 cytosol
H[c]	H+	H	1 cytosol
H[e]	H+(e)	H	1 extracellular
H2MB4P[c]	1-Hydroxy-2-methyl-2-butenyl 4-diphosphate	C5H9O8P2	-3 cytosol
H2O[c]	H2O	H2O	0 cytosol
H2O[e]	H2O(e)	H2O	0 extracellular
H2O2[c]	H2O2	H2O2	0 cytosol
H2S[c]	Hydrogen sulfide	H2S	0 cytosol
H2SO3[e]	Sulfite	HO3S	-1 cytosol
H3MCOA[c]	(S)-3-Hydroxy-3-methylglutaryl-CoA	C27H39N7O20P3S	-5 cytosol
HBENZ[c]	3-hydroxybenzoate	C7H5O3	-1 Cytosol
HBENZ[e]	3-hydroxybenzoate	C7H5O3	-1 extracellular
HBUT[c]	2-Hydroxybutyrate	C4H7O3	-1 Cytosol
HBUT[e]	2-Hydroxybutyrate	C4H7O3	-1 extracellular
HCN[c]	hydrogen cyanide	CHN	0 Cytosol
HCO3[c]	hydrogencarbonate	CHO3	-1 cytosol
HCYS[c]	L-Homocysteine	C4H9NO2S	0 cytosol
HCYS[e]	L-Homocysteine	C4H9NO2S	0 extracellular
HDBUT[c]	(R)-3-Hydroxybutanoate	C4H7O3	-1 cytosol
HDBUT[e]	(R)-3-Hydroxybutanoate(e)	C4H7O3	-1 extracellular
HEAL[c]	hexanal	C6H12O	0 cytosol
HEME[c]	Heme	C34H30FeN4O4	-2 cytosol
HEME[e]	Heme(e)	C34H30FeN4O4	-2 extracellular
HEMEA[c]	Heme A	C49H54FeN4O6	-2 cytosol
HEMEO[c]	Heme O	C49H56FeN4O5	-2 cytosol
HEXSUL[c]	hexanesulfonate	C6H13O3S	-1 cytosol
HEXSUL[e]	hexanesulfonate(e)	C6H13O3S	-1 extracellular
HG2[c]	Mercury (+2)	Hg	2 cytosol
HG2[e]	Mercury (+2)	Hg	2 extracellular
HHDCOA[c]	(S)-3-Hydroxyhexadecanoyl-CoA	C37H62N7O18P3S	-4 cytosol
HIBUTCOA[c]	(S)-3-Hydroxyisobutyryl-CoA	C25H38N7O18P3S	-4 cytosol
HIS[c]	L-Histidine	C6H9N3O2	0 cytosol
HIS[e]	L-Histidine	C6H9N3O2	0 extracellular
HISOL[c]	L-Histidinol	C6H12N3O	1 cytosol
HISOLP[c]	L-Histidinol phosphate	C6H11N3O4P	-1 cytosol

HIUR[c]	5-Hydroxyisourate	C5H4N4O4	0 cytosol
HMBUTCOA[c]	(2S,3S)-3-Hydroxy-2-methylbutanoyl-CoA	C26H40N7O18P3S	-4 cytosol
HMOP[c]	(R)-3-Hydroxy-3-methyl-2-oxopentanoate	C6H9O4	-1 cytosol
HMTB[c]	Hydroxymethylbilane	C40H38N4O17	-8 cytosol
HNO2[c]	Nitrite	NO2	-1 cytosol
HNO2[e]	Nitrite(e)	NO2	-1 extracellular
HNO3[c]	Nitrate	NO3	-1 cytosol
HNO3[e]	Nitrate(e)	NO3	-1 extracellular
HOPP[c]	2-Hydroxy-3-oxopropanoate	C3H3O4	-1 cytosol
HPCOA[c]	3-Hydroxypropionyl-CoA	C24H36N7O18P3S	-4 cytosol
C170COA[c]	heptadecanoyl-CoA(anteiso-C17:0 CoA)	C38H64N7O17P3S	-4 Cytosol
HPRO[c]	trans-4-Hydroxy-L-proline	C5H9NO3	0 cytosol
HPYR[c]	Hydroxypyruvate	C3H3O4	-1 cytosol
HSER[c]	L-Homoserine	C4H9NO3	0 cytosol
HTAUR[c]	hypotaurine zwitterion	C2H7NO2S	0 cytosol
HYBY[c]	Hydrogenobyrate	C45H54N4O14	-6 cytosol
HYBYDA[c]	Hydrogenobyrate a,c diamide	C45H58N6O12	-4 cytosol
HYDEC[c]	(S)-Hydroxydecanoyl-CoA	C31H50N7O18P3S	-4 cytosol
HYDOCOA[c]	(S)-3-Hydroxydodecanoyl-CoA	C33H54N7O18P3S	-4 cytosol
HYDROXYAKG[c]	D-4-Hydroxy-2-oxoglutarate	C5H4O6	-2 cytosol
HYETHS[c]	2-Hydroxyethanesulfonate	C2H5O4S	-1 cytosol
HYETHS[e]	2-Hydroxyethanesulfonate(e)	C2H5O4S	-1 extracellular
HYHECOA[c]	(S)-Hydroxyhexanoyl-CoA	C27H42N7O18P3S	-4 cytosol
HYISORATE[c]	3-Hydroxy-2-methylpropanoate	C4H7O3	-1 cytosol
HYKEMEP[c]	2-Hydroxy-3-keto-5-methylthiopentenyl-1-phosphate	C6H9O6PS	-2 cytosol
HYOXGLU[c]	4-Hydroxy-2-oxoglutarate	C5H4O6	-2 cytosol
HYTACOA[c]	(S)-Hydroxyoctanoyl-CoA	C29H46N7O18P3S	-4 cytosol
HYTECOA[c]	(S)-3-Hydroxytetradecanoyl-CoA	C35H58N7O18P3S	-4 cytosol
HYURCAR[c]	5-Hydroxy-2-oxo-4-ureido-2,5-dihydro-1H-imidazole-5-	C5H5N4O5	-1 cytosol
HYXN[c]	Hypoxanthine	C5H4N4O	0 cytosol
HYXN[e]	Hypoxanthine(e)	C5H4N4O	0 extracellular
IBCOA[c]	Isobutyryl-CoA	C25H38N7O17P3S	-4 Cytosol
ICHOR[c]	Isochorismate	C10H8O6	-2 cytosol
ICIT[c]	Isocitrate	C6H5O7	-3 cytosol
IDP[c]	IDP	C10H11N4O11P2	-3 cytosol
IGP[c]	Indoleglycerol phosphate	C11H12NO6P	-2 cytosol
ILE[c]	L-Isoleucine	C6H13NO2	0 cytosol
ILE[e]	L-Isoleucine(e)	C6H13NO2	0 extracellular
IMACP[c]	3-(Imidazol-4-yl)-2-oxopropyl phosphate	C6H7N2O5P	-2 cytosol
IMASP[c]	Iminoaspartate	C4H3NO4	-2 cytosol
IMGLY[c]	Iminoglycine	C2H2NO2	-1 cytosol
IMIPR[c]	4-Imidazolone-5-propanoate	C6H6N2O3	-2 cytosol
IMP[c]	IMP	C10H11N4O8P	-2 cytosol
INOSOSE[c]	2,4,6/3,5-Pentahydroxycyclohexanone	C6H10O6	0 cytosol
INS[c]	Inosine	C10H12N4O5	0 cytosol
INS[e]	Inosine(e)	C10H12N4O5	0 extracellular
IPP[c]	Isopentenyl diphosphate	C5H9O7P2	-3 cytosol
IPPMAL[c]	(2S)-2-Isopropylmalate	C7H10O5	-2 cytosol
ITP[c]	ITP	C10H11N4O14P3	-4 cytosol
K[c]	Potassium	K	1 cytosol
K[e]	Potassium(e)	K	1 extracellular
KDG[c]	2-Dehydro-3-deoxy-D-gluconate	C6H9O6	-1 cytosol
KDPG[c]	2-Dehydro-3-deoxy-6-phospho-D-gluconate	C6H8O9P	-3 cytosol
KYN[c]	L-Kynurenine	C10H12N2O3	0 cytosol
LAC[c]	L-Lactate	C3H5O3	-1 cytosol
LAC[e]	L-Lactate(e)	C3H5O3	-1 extracellular
LAC6P[c]	Lactose 6-phosphate	C12H21O14P	-2 cytosol
LACTOSE[c]	Lactose	C12H22O11	0 cytosol
LACTOSE[e]	Lactose(e)	C12H22O11	0 extracellular
LAOL[c]	L-Arabitol	C5H12O5	0 cytosol
LAOL[e]	L-Arabitol	C5H12O5	0 cytosol
LARAB[c]	L-Arabinose	C5H10O5	0 cytosol
LARAB[e]	L-Arabinose(e)	C5H10O5	0 extracellular

LEU[c]	L-Leucine	C6H13NO2	0 cytosol
LEU[e]	L-Leucine(e)	C6H13NO2	0 extracellular
LEVM[c]	Levan(m)	C18H32O16	0 cytosol
LEV MN[c]	Levan(m+n)	C42H72O36	0 cytosol
LEVN[c]	Levan(n)	C24H42O21	0 cytosol
LEVN1[c]	Levan(n-1)	C18H32O16	0 cytosol
LGALNT[c]	L-Galactonate	C6H11O7	-1 cytosol
LGLUTRNA[c]	L-Glutamyl-tRNA(Glu)	C25H36N6O19P2R2	0 cytosol
LGT[c]	(R)-S-Lactoylg glutathione	C13H20N3O8S	-1 cytosol
LIPO2[c]	lipoteichoic acid (n=24), linked, N-acetyl-D-glucosamine	C30944H54088N2400O25500P24	-2400 Cytosol
LIPO3[c]	lipoteichoic acid (n=24), linked, D-alanine substituted	C18944H39688N2400O18300P24	-2400 Cytosol
LIPO4[c]	lipoteichoic acid (n=24), linked, unsubstituted	C11744H22888O13500P2400	-2400 Cytosol
LIPOTA[c]	lipoteichoic acid (n=24), linked, glucose substituted	C26144H46888O25500P2400	-2400 Cytosol
LIPOYLPROTEIN[c]	Lipoylprotein	C8H14NOS2R	0 cytosol
LLCT[c]	Cystathionine	C7H14N2O4S	0 cytosol
LMETTRNA[c]	L-Methionyl-tRNA (Met)	C5H11NO2SX	1 Cytosol
LPACP[c]	Lipoyl-[acp]	C8H13OS3R	0 cytosol
LRL[c]	L-Ribulose	C5H10O5	0 cytosol
LRL5P[c]	L-Ribulose 5-phosphate	C5H9O8P	-2 cytosol
LYS[c]	L-Lysine	C6H15N2O2	1 cytosol
LYS[e]	L-Lysine(e)	C6H15N2O2	1 extracellular
MAL[c]	(S)-Malate	C4H4O5	-2 cytosol
MAL[e]	(S)-Malate(e)	C4H4O5	-2 extracellular
MALACP[c]	Malonyl-[ACP]	C14H22N2O10PRS	-2 cytosol
MALCOA[c]	Malonyl-CoA	C24H33N7O19P3S	-5 cytosol
MALN[c]	Malonate	C3H2O4	-2 cytosol
MALN[e]	Malonate(e)	C3H2O4	-2 extracellular
MAN[c]	D-Mannose	C6H12O6	0 cytosol
MAN[e]	D-Mannose(e)	C6H12O6	0 extracellular
MAN1P[c]	D-Mannose 1-phosphate	C6H11O9P	-2 cytosol
MAN6P[c]	D-Mannose 6-phosphate	C6H11O9P	-2 cytosol
MANOE[c]	D-Mannonate	C6H11O7	-1 cytosol
MAPYR[c]	maleylpyruvate	C7H4O6	-2 Cytosol
MATR[c]	Manninotriose	C18H32O16	0 cytosol
MBCOA[c]	(S)-2-Methylbutanoyl-CoA	C26H40N7O17P3S	-4 cytosol
MBUTCOA[c]	3-Methylbutanoyl-CoA	C26H40N7O17P3S	-4 cytosol
MCECOA[c]	2-Methylacetoacetyl-CoA	C26H38N7O18P3S	-4 cytosol
MCRCOA[c]	2-Methylbut-2-enoyl-CoA	C26H38N7O17P3S	-4 cytosol
MDAPIM[c]	meso-2,6-Diaminoheptanedioate	C7H14N2O4	0 cytosol
MDAPIM[e]	meso-2,6-Diaminoheptanedioate	C7H14N2O4	0 extracellular
MECRCO[c]	3-Methylcrotonyl-CoA	C26H38N7O17P3S	-4 cytosol
MEENCOA[c]	2-Methylprop-2-enoyl-CoA	C25H36N7O17P3S	-4 cytosol
MELI[c]	Melibiose	C12H22O11	0 cytosol
MELI[e]	Melibiose(e)	C12H22O11	0 extracellular
MELT[c]	Melibiotol	C12H24O11	0 cytosol
MEMA[c]	2-Methylmaleate	C5H4O4	-2 cytosol
MERLAC[c]	3-Mercaptolactate	C3H5O3S	-1 cytosol
MET[c]	L-Methionine	C5H11NO2S	0 cytosol
MET[e]	L-Methionine(e)	C5H11NO2S	0 extracellular
METALA[c]	met-L-ala-L	C8H16N2O3S	0 cytosol
METALA[e]	met-L-ala-L(e)	C8H16N2O3S	0 extracellular
METH[c]	Methanethiol	CH4S	0 cytosol
METHF[c]	5,10-Methenyltetrahydrofolate	C20H20N7O6	-1 cytosol
METOBUC[c]	4-Methylthio-2-oxobutanoic acid	C5H7O3S	-1 cytosol
METRO[c]	L-methionine R-oxide	C5H11NO3S	0 Cytosol
METSA[c]	Methanesulfonic acid	CH3SO3	-1 cytosol
METSA[e]	Methanesulfonic acid(e)	CH3SO3	-1 extracellular
METTHF[c]	5,10-Methylenetetrahydrofolate	C20H21N7O6	-2 cytosol
MG[c]	Magnesium	Mg	2 cytosol
MG[e]	Magnesium(e)	Mg	2 extracellular
MGTAC[c]	minor teichoic acid (acetylgalactosamine glucose phosph	C420H750N30O420P30	-30 Cytosol
MLT[c]	Maltose	C12H22O11	0 cytosol
MLT[e]	Maltose(e)	C12H22O11	0 extracellular

MMALN[c]	Methylmalonate	C4H4O4	-2 cytosol
MMCOA[c]	(S)-Methylmalonyl-CoA	C25H35N7O19P3S	-5 cytosol
MMSA[c]	(S)-Methylmalonate semialdehyde	C4H5O3	-1 cytosol
MN2[c]	manganese	Mn	2 cytosol
MN2[e]	manganese	Mn	2 extracellular
MNT[e]	Mannitol(e)	C6H14O6	0 extracellular
MNT1P[c]	D-Mannitol 1-phosphate	C6H13O9P	-2 cytosol
MPYR[c]	Mercaptopyruvate	C3H3O3S	-1 cytosol
MPYR[e]	Mercaptopyruvate	C3H3O3S	-1 extracellular
MQL8[c]	Menaquinol 8	C51H74O2	0 cytosol
MQN8[c]	Menaquinone 8	C51H72O2	0 cytosol
MSEL[c]	Methylselenol	CH4Se	0 cytosol
MTART[c]	meso-Tartaric acid	C4H4O6	-2 Cytosol
MTHF[c]	5-Methyltetrahydrofolate	C20H23N7O6	-2 cytosol
MTHGXL[c]	Methylglyoxal	C3H4O2	0 cytosol
MTHPTGLU[c]	5-methyltetrahydropteroyltri-L-glutamic acid	C30H39N9O12	0 Cytosol
MTR[c]	5-Methylthio-D-ribose	C6H12O4S	0 cytosol
MTR1P[c]	S-Methyl-5-thio-D-ribose 1-phosphate	C6H11O7PS	-2 cytosol
MTRL1P[c]	S-Methyl-5-thio-D-ribulose 1-phosphate	C6H11O7PS	-2 cytosol
MTRNA[c]	tRNA(Met)	HOX	0 Cytosol
MUCO[c]	cis,cis-Muconate	C6H4O4	-2 cytosol
MURNAC6P[c]	N-Acetylmuramic acid 6-phosphate	C11H17NO11P	-3 cytosol
MYOI[c]	myo-Inositol	C6H12O6	0 cytosol
MYOI[e]	myo-Inositol	C6H12O6	0 extracellular
MYOIP[c]	myo-Inositol phosphate	C6H11O9P	-2 cytosol
N2[c]	nitrogen	N2	0 cytosol
N2[e]	nitrogen	N2	0 extracellular
NA[c]	Sodium	Na	1 cytosol
NA[e]	Sodium(e)	Na	1 extracellular
NAD[c]	NAD+	C21H26N7O14P2	-1 cytosol
NADH[c]	NADH	C21H27N7O14P2	-2 cytosol
NADP[c]	NADP+	C21H25N7O17P3	-3 cytosol
NADPH[c]	NADPH	C21H26N7O17P3	-4 cytosol
NAG[e]	N-Acetyl-D-glucosamine(e)	C8H15NO6	0 extracellular
NAGA1P[c]	N-Acetyl-alpha-D-glucosamine 1-phosphate	C8H14NO9P	-2 cytosol
NAGA6P[c]	N-Acetyl-D-glucosamine 6-phosphate	C8H14NO9P	-2 cytosol
NAGLU[c]	N-Acetyl-L-glutamate	C7H9NO5	-2 cytosol
NAGLUP[c]	N-Acetyl-L-glutamate 5-phosphate	C7H9NO8P	-3 cytosol
NAGLUS[c]	N-Acetyl-L-glutamate 5-semialdehyde	C7H10NO4	-1 cytosol
NAMA[c]	N-Acetyl-D-mannosamine	C8H15NO6	0 cytosol
NAMD[c]	N-Ribosylnicotinamide	C11H15N2O5	1 cytosol
NAMN[c]	Nicotinate D-ribonucleotide	C11H12NO9P	-2 cytosol
NAORN[c]	N-Acetylornithine	C7H14N2O3	0 cytosol
NAR[c]	Nicotinate D-ribonucleoside	C11H13NO6	0 cytosol
NH3[c]	Ammonia	H4N	1 cytosol
NH3[e]	Ammonia	H4N	1 extracellular
NICA[c]	Nicotinate	C6H4NO2	-1 cytosol
NICA[e]	Nicotinate	C6H4NO2	-1 extracellular
NICD[c]	Nicotinamide	C6H6N2O	0 cytosol
NMN[c]	Nicotinamide D-ribonucleotide	C11H14N2O8P	-1 cytosol
NO[c]	Nitric oxide	NO	0 cytosol
NPRAN[c]	N-(5-Phospho-D-ribosyl)anthranilate	C12H13NO9P	-3 cytosol
O2[c]	O2	O2	0 cytosol
O2[e]	O2(e)	O2	0 extracellular
O2S[c]	superoxide	O2	-1 cytosol
OA[c]	Oxaloacetate	C4H2O5	-2 cytosol
OA[e]	Oxaloacetate	C4H2O5	-2 extracellular
OAHSER[c]	O-Acetyl-L-homoserine	C6H11NO4	0 cytosol
OBUT[c]	2-Oxobutanoate	C4H5O3	-1 cytosol
OFER[c]	Oxidized ferredoxin	X	0 cytosol
OGT[c]	Glutathione disulfide	C20H30N6O12S2	-2 cytosol
OHEXCOA[c]	3-Oxohexanoyl-CoA	C27H40N7O18P3S	-4 cytosol
OHPB[c]	2-Oxo-3-hydroxy-4-phosphobutanoate	C4H4O8P	-3 cytosol

OICAP[c]	(2S)-2-Isopropyl-3-oxosuccinate	C7H8O5	-2 cytosol
OMP[c]	Orotidine 5'-phosphate	C10H10N2O11P	-3 cytosol
OMP[e]	Orotidine 5'-phosphate	C10H10N2O11P	-3 extracellular
OMVAL[c]	3-Methyl-2-oxobutanoic acid	C5H7O3	-1 cytosol
OPP[c]	all-trans-Octaprenyl diphosphate	C40H65O7P2	-3 cytosol
ORN[c]	L-Ornithine	C5H13N2O2	1 cytosol
ORN[e]	L-Ornithine(e)	C5H13N2O2	1 extracellular
OROA[c]	Orotate	C5H3N2O4	-1 cytosol
OROA[e]	Orotate	C5H3N2O4	-1 extracellular
OSLHSER[c]	O-Succinyl-L-homoserine	C8H12NO6	-1 cytosol
OTHIO[c]	Thioredoxin disulfide	C10H13N4O4S2R4	1 cytosol
OXGLY[c]	Oxaloglycolate	C4H2O6	-2 Cytosol
P5C[c]	(S)-1-Pyrroline-5-carboxylate	C5H6NO2	-1 cytosol
P5P[c]	pyridoxine 5'-phosphate	C8H10NO6P	-2 cytosol
PA[c]	1,2-diacyl-sn-glycerol 3-phosphate	C3344H6388O800P100	-200 cytosol
PA[e]	1,2-diacyl-sn-glycerol 3-phosphate	C3344H6388O800P100	-200 extracellular
PABA[c]	4-Aminobenzoate	C7H6NO2	-1 cytosol
PAC[c]	Phenylacetic acid	C8H7O2	-1 cytosol
PANT[c]	(R)-Pantoate	C6H11O4	-1 cytosol
PAP[c]	Adenosine 3',5'-bisphosphate	C10H11N5O10P2	-4 cytosol
PAPP[c]	propanoyl phosphate	C3H5O5P	-2 cytosol
PAPS[c]	3'-Phosphoadenylyl sulfate	C10H11N5O13P2S	-4 cytosol
PDXAL[c]	pyridoxal	C8H9NO3	0 cytosol
PDXAM[c]	pyridoxamine	C8H13N2O2	1 cytosol
PDXAM5P[c]	pyridoxamine 5'-phosphate	C8H12N2O5P	-1 cytosol
PDXI[c]	pyridoxine	C8H11NO3	0 cytosol
PDXI[e]	pyridoxine	C8H11NO3	0 extracellular
PDXL5P[c]	Pyridoxal phosphate	C8H8NO6P	-2 cytosol
PE[c]	Phosphatidylethanolamine	C3544H7088N100O800P100	0 cytosol
PENI[c]	Penicillin	C9H11N2O4S	-1 Cytosol
PENIA[c]	Penicilloic acid	C9H12N2O5S	-2 Cytosol
PEP[c]	Phosphoenolpyruvate	C3H2O6P	-3 cytosol
PEPG[c]	Peptidoglycan subunit	C40H62N8O21	-2 Cytosol
PG[c]	Phosphatidylglycerol	C3644H7188O1000P100	-100 cytosol
PG[e]	Phosphatidylglycerol	C3644H7188O1000P100	-100 extracellular
PGP[c]	Phosphatidylglycerophosphate	C3644H7088O1300P200	-300 cytosol
PHACAL[c]	Phenylacetaldehyde	C8H8O	0 cytosol
PHC[c]	L-1-Pyrroline-3-hydroxy-5-carboxylate	C5H6NO3	-1 cytosol
PHE[c]	L-Phenylalanine	C9H11NO2	0 cytosol
PHE[e]	L-Phenylalanine	C9H11NO2	0 extracellular
PHEN[c]	Prephenate	C10H8O6	-2 cytosol
PHP[c]	3-Phosphonooxypyruvate	C3H2O7P	-3 cytosol
PHPYR[c]	Phenylpyruvate	C9H7O3	-1 cytosol
PHPYR[e]	Phenylpyruvate	C9H7O3	-1 extracellular
PHSER[c]	O-Phospho-L-homoserine	C4H8NO6P	-2 cytosol
PHYDP[c]	Phytol diphosphate	C20H39O7P2	-3 cytosol
PI[c]	Orthophosphate	HO4P	-2 cytosol
PI[e]	Orthophosphate(e)	HO4P	-2 extracellular
PL[c]	Phosphatidylcholine	C3844H7688N100O800P100	0 cytosol
PMCOA[c]	Pimeloyl-CoA	C28H41N7O19P3S	-5 Cytosol
C160COA[c]	palmitoyl-CoA(n-C16:0 CoA)	C37H62N7O17P3S	-4 cytosol
PNTO[c]	Pantothenate	C9H16NO5	-1 cytosol
PNTO[e]	Pantothenate(e)	C9H16NO5	-1 extracellular
POLHYBU[c]	Poly-beta-hydroxybutyrate	C12H18O6	0 cytosol
PPAP[c]	Propanoyl phosphate	C3H5O5P	-2 cytosol
PPBG[c]	Prophobilinogen	C10H13N2O4	-1 cytosol
PPGIX[c]	Protoporphyrinogen IX	C34H38N4O4	-2 cytosol
ppGpp[c]	Guanosine 3',5'-bis(diphosphate)	C10H12N5O17P4	-5 cytosol
PPI[c]	Diphosphate	HO7P2	-3 cytosol
PPI[e]	Diphosphate(e)	HO7P2	-3 extracellular
PPMAL[c]	2-Isopropylmaleate	C7H8O4	-2 cytosol
pppGpp[c]	Guanosine 3'-diphosphate 5'-triphosphate	C10H12N5O20P5	-6 cytosol
PPP[c]	Triphosphate	H1O10P3	-4 cytosol

PPRIX[c]	Protoporphyrin	C34H32N4O4	-2 cytosol
PQ[c]	Phylloquinone	C31H46O2	0 cytosol
PRAM[c]	5-Phosphoribosylamine	C5H11NO7P	-1 cytosol
PRBAMP[c]	Phosphoribosyl-AMP	C15H19N5O14P2	-4 cytosol
PRBATP[c]	Phosphoribosyl-ATP	C15H19N5O20P4	-6 cytosol
PRE2[c]	Precorrin 2	C42H41N4O16	-7 cytosol
PRE3A[c]	precorrin 3A	C43H43N4O16	-7 cytosol
PRE3B[c]	Precorrin 3B	C43H43N4O17	-7 cytosol
PRE4[c]	Precorrin 4	C44H44N4O17	-8 cytosol
PRE5[c]	precorrin 5	C45H46N4O17	-8 cytosol
PRE6X[c]	Precorrin 6X	C44H46N4O16	-8 cytosol
PRE6Y[c]	Precorrin 6Y	C44H49N4O16	-7 cytosol
PRE8X[c]	Precorrin 8X	C45H53N4O14	-7 cytosol
PRECZ[c]	Precursor Z	C10H12N5O8P	-2 cytosol
PREQ2P[c]	Presqualene diphosphate	C30H49O7P2	-3 cytosol
PRFICA[c]	1-(5'-Phosphoribosyl)-5-formamido-4-imidazolecarboxar	C10H13N4O9P	-2 cytosol
PRFP[c]	5-(5-Phospho-D-ribosylaminoformimino)-1-(5-phosphor	C15H21N5O15P2	-4 cytosol
PRLP[c]	N-(5'-Phospho-D-1'-ribulosylformimino)-5-amino-1-(5"-	C15H21N5O15P2	-4 cytosol
PRO[c]	L-Proline	C5H9NO2	0 cytosol
PRO[e]	L-Proline(e)	C5H9NO2	0 extracellular
PROP[c]	Propanoate	C3H5O2	-1 cytosol
PROPACP[c]	Propanoyl-ACP	C14H25N2O8PRS	-1 cytosol
PROPCOA[c]	Propanoyl-CoA	C24H36N7O17P3S	-4 cytosol
PRPECO[c]	Propenoyl-CoA	C24H34N7O17P3S	-4 cytosol
PRPP[c]	5-Phospho-alpha-D-ribose 1-diphosphate	C5H8O14P3	-5 cytosol
PS[c]	Phosphatidylserine	C3644H7088N100O1000P100	-100 cytosol
PSMEE[c]	Phosphatidyl-N-methylethanolamine	C3644H7388N100O800P100	0 cytosol
PSNDM[c]	Phosphatidyl-N-dimethylethanolamine	C3744H7688N100O800P100	-100 cytosol
C150COA[c]	pentadecanoyl-CoA(anteiso-C15:0 CoA)	C36H60N7O17P3S	-4 Cytosol
PTRSC[c]	Putrescine	C4H14N2	2 cytosol
PTRSC[e]	Putrescine(e)	C4H14N2	2 extracellular
PTT[c]	Pantetheine	C11H22N2O4S	0 Cytosol
PYR[c]	Pyruvate	C3H3O3	-1 cytosol
PYR[e]	Pyruvate	C3H3O3	-1 extracellular
PYR2CAR[c]	Pyridine-2,3-dicarboxylate	C7H3NO4	-2 cytosol
PYRTETR[c]	6-Pyruvoyltetrahydropterin	C9H11N5O3	0 cytosol
R1P[c]	D-Ribose 1-phosphate	C5H9O8P	-2 cytosol
R2MMAL[c]	(R)-2-Methylmalate	C5H6O5	-2 cytosol
R5P[c]	D-Ribose 5-phosphate	C5H9O8P	-2 cytosol
RAF[c]	Raffinose	C18H32O16	0 cytosol
RAF[e]	Raffinose	C18H32O16	0 extracellular
RALIN[c]	(R)(-)-Allantoin	C4H5N4O3	-1 cytosol
RAMOL[c]	(R)-1-aminopropan-2-ol	C3H10NO	1 cytosol
RFER[c]	Reduced ferredoxin	XH2	0 cytosol
RGT[c]	Glutathione	C10H16N3O6S	-1 cytosol
RGT[e]	Glutathione(e)	C10H16N3O6S	-1 extracellular
RHCYS[c]	S-Ribosyl-L-homocysteine	C9H17NO6S	0 cytosol
RHYBC[c]	(R)-3-Hydroxybutanoyl-CoA	C25H38N7O18P3S	-4 cytosol
RI5P[c]	alpha-ribazole 5'-phosphate	C14H17N2O7P	-2 cytosol
RIB[c]	D-Ribose	C5H10O5	0 cytosol
RIB[e]	D-Ribose(e)	C5H10O5	0 extracellular
RIBAZ[c]	alpha-Ribazole	C14H18N2O4	0 cytosol
RIBFLAV[c]	Riboflavin	C17H20N4O6	0 cytosol
RIBFLAV[e]	Riboflavin(e)	C17H20N4O6	0 extracellular
RL5P[c]	D-Ribulose 5-phosphate	C5H9O8P	-2 cytosol
RMMCOA[c]	(R)-Methylmalonyl-CoA	C25H35N7O19P3S	-5 cytosol
RTHIO[c]	Thioredoxin	C10H15N4O4S2R4	1 cytosol
S[c]	Sulfur	S	0 cytosol
S4AMOXOPE[c]	(S)-4-Amino-5-oxopentanoate	C5H9NO3	0 cytosol
S7P[c]	Sedoheptulose 7-phosphate	C7H13O10P	-2 cytosol
SAH[c]	S-Adenosyl-L-homocysteine	C14H20N6O5S	0 cytosol
SAICAR[c]	1-(5'-Phosphoribosyl)-5-amino-4-(N-succinocarboxamidi	C13H15N4O12P	-4 cytosol
SALAL[c]	Salicyl alcohol	C7H8O2	0 cytosol

SALCN6P[c]	Salicin 6-phosphate	C13H17O10P	-2 cytosol
SALI[e]	Salicin(e)	C13H18O7	0 extracellular
SAM[c]	S-Adenosyl-L-methionine	C15H23N6O5S	1 cytosol
SAP[c]	S-Aminomethyl-dihydro-lipoylprotein	C9H20N2OS2R	1 cytosol
SARC[c]	Sarcosine	C3H7NO2	0 Cytosol
SCYS[c]	selenocysteine	C3H7NO2Se	0 cytosol
SCYST[c]	L-selenocystathionine	C7H14N2O4Se	0 cytosol
SDAPIM[c]	N-Succinyl-L-L-2,6-diaminoheptanedioate	C11H16N2O7	-2 Cytosol
SELD[c]	seline	HSe	-1 cytosol
SELNT[c]	selenate	O4Se	-2 cytosol
SELT[c]	selenite	SeO3	-2 cytosol
SEMET[c]	selenomethionine	C5H11NO2Se	0 cytosol
SER[c]	L-Serine	C3H7NO3	0 cytosol
SER[e]	L-Serine(e)	C3H7NO3	0 extracellular
SHCHC[c]	(1R,6R)-6-Hydroxy-2-succinylcyclohexa-2,4-diene-1-car	C11H10O6	-2 cytosol
SHCR[c]	sirohydrochlorin	C42H38N4O16	-8 cytosol
SHSYS[c]	selenohomocysteine	C4H8NO2Se	-1 cytosol
SIHM[c]	Siroheme	C42H36FeN4O16	-8 cytosol
SLF[c]	Sulfate	O4S	-2 cytosol
SLF[e]	Sulfate(e)	O4S	-2 extracellular
SME[c]	Shikimate	C7H9O5	-1 cytosol
SME3P[c]	Shikimate 3-phosphate	C7H8O8P	-3 cytosol
SOR[c]	L-sorbose	C6H12O6	0 cytosol
SOR[e]	L-sorbose(e)	C6H12O6	0 extracellular
SOT[c]	D-Sorbitol	C6H14O6	0 cytosol
SPRM[c]	Spermine	C10H30N4	4 cytosol
SPRMD[c]	Spermidine	C7H22N3	3 cytosol
SPRMD[e]	Spermidine(e)	C7H22N3	3 extracellular
SQL[c]	Squalene	C30H50	0 cytosol
STAC[c]	Stachyose	C24H42O21	0 cytosol
STAR[e]	Starch(n)	C48H80O40	0 cytosol
STAR[c]	Starch(n)	C48H80O40	0 cytosol
STARI[c]	Starch(n-1)	C24H40O20	0 cytosol
SUC[c]	Sucrose	C12H22O11	0 cytosol
SUC[e]	Sucrose(e)	C12H22O11	0 extracellular
SUC6P[c]	Sucrose 6-phosphate	C12H21O14P	-2 cytosol
SUCBEN[c]	2-Succinylbenzoate	C11H8O5	-2 cytosol
SUCBENCO[c]	2-Succinylbenzoyl-CoA	C32H39N7O20P3S	-5 cytosol
SUCC[c]	Succinate	C4H4O4	-2 cytosol
SUCC[e]	Succinate(e)	C4H4O4	-2 extracellular
SUCCOA[c]	Succinyl-CoA	C25H35N7O19P3S	-5 cytosol
SUCCSAL[c]	Succinate semialdehyde	C4H5O3	-1 cytosol
SUCCYCA[c]	2-Succinyl-5-enolpyruvyl-6-hydroxy-3-cyclohexene-1-ca	C14H13O9	-3 cytosol
SULA[c]	Sulfoacetate	C2H2O5S	-2 cytosol
SULA[e]	Sulfoacetate(e)	C2H2O5S	-2 extracellular
SULALA[c]	3-sulfin-L-alanine	C3H6NO4S	-1 cytosol
SULCYS[c]	S-Sulfo-L-cysteine	C3H6NO5S2	-1 cytosol
SULDO[c]	Sulfur donor	S	-2 cytosol
T3P1[c]	D-Glyceraldehyde 3-phosphate	C3H5O6P	-2 cytosol
T3P2[c]	Dihydroxyacetone phosphate	C3H5O6P	-2 cytosol
T6P[c]	D-Tagatose 6-phosphate	C6H11O9P	-2 cytosol
TAGBP[c]	D-Tagatose 1,6-bisphosphate	C6H10O12P2	-4 cytosol
TAGUR[c]	D-Tagaturonate	C6H9O7	-1 cytosol
TART[c]	L-tartarate	C4H4O6	-2 Cytosol
TAUR[c]	Taurine	C2H7NO3S	0 cytosol
TAUR[e]	Taurine(e)	C2H7NO3S	0 extracellular
TCHDIONE[c]	3D-(3,5/4)-Trihydroxycyclohexane-1,2-dione	C6H8O5	0 cytosol
C140COA[c]	tetradecanoyl-CoA(C14:0 CoA)	C35H58N7O17P3S	-4 Cytosol
TDHDP[c]	2,3,4,5-Tetrahydrodipicolinate	C7H7NO4	-2 cytosol
THDP[e]	Thiamin diphosphate	C12H16N4O7P2S	-2 extracellular
THDP[c]	Thiamin diphosphate	C12H16N4O7P2S	-2 cytosol
THF[c]	Tetrahydrofolate	C19H21N7O6	-2 cytosol
THF[e]	Tetrahydrofolate	C19H21N7O6	-2 extracellular

THFGLU[c]	Tetrahydrofolyl-[Glu](2)	C24H30N8O9	0 cytosol
THFGLU3[c]	Tetrahydrofolyl-[Glu](3)	C29H37N9O12	0 cytosol
THJ[c]	Thiosulfate	HO3S2	-1 cytosol
THJ[e]	Thiosulfate(e)	HO3S2	-1 extracellular
THME[c]	Thiamine	C12H17N4OS	1 cytosol
THME[e]	Thiamine(e)	C12H17N4OS	1 extracellular
THMP[c]	Thiamin monophosphate	C12H16N4O4PS	-1 cytosol
THPTGLU[c]	tetrahydropteroyltri-L-glutamic acid	C29H37N9O12	0 Cytosol
THR[c]	L-Threonine	C4H9NO3	0 cytosol
THR[e]	L-Threonine	C4H9NO3	0 extracellular
THR3P[c]	L-Threonine O-3-phosphate	C4H8NO6P	-2 cytosol
THTP[c]	Thiamin triphosphate	C12H16N4O10P3S	-3 cytosol
THY[c]	Thymine	C5H6N2O2	0 Cytosol
THY[e]	Thymine	C5H6N2O2	0 extracellular
THZ[c]	5-(2-Hydroxyethyl)-4-methylthiazole	C6H9NOS	0 cytosol
THZP[c]	4-Methyl-5-(2-phosphoethyl)-thiazole	C6H8NO4PS	-2 cytosol
TMASP[c]	threo-3-methyl-L-aspartate	C5H7NO4	-2 Cytosol
TRADOCO[c]	2-trans-Dodecenoyl-CoA	C33H52N7O17P3S	-4 cytosol
TRE[e]	alpha,alpha-Trehalose(e)	C12H22O11	0 extracellular
TRE6P[c]	Trehalose 6-phosphate	C12H21O14P	-2 cytosol
TRP[c]	L-Tryptophan	C11H12N2O2	0 cytosol
TRP[e]	L-Tryptophan(e)	C11H12N2O2	0 extracellular
TUR[c]	turanose	C12H22O11	0 cytosol
TUR[e]	turanose	C12H22O11	0 extracellular
TYR[c]	L-Tyrosine	C9H11NO3	0 cytosol
TYR[e]	L-Tyrosine	C9H11NO3	0 extracellular
UAAGMDA[c]	Undecaprenyl-diphospho-N-acetylmuramoyl-(N-acetylglucosamine)-6-phosphate	C95H152N8O28P2	-4 cytosol
UACCG[c]	UDP-N-acetyl-3-(1-carboxyvinyl)-D-glucosamine	C20H26N3O19P2	-3 cytosol
UACMAM[c]	UDP-N-acetyl-D-mannosamine	C17H25N3O17P2	-2 cytosol
UACMAMU[c]	UDP-N-acetyl-D-mannosaminouronate	C17H22N3O18P2	-3 cytosol
UAGMDA[c]	Undecaprenyl-diphospho-N-acetylmuramoyl-L-alanyl-D-glutamate	C87H139N7O23P2	-4 cytosol
UDCPDP[c]	di-trans,poly-cis-Undecaprenyl diphosphate	C55H89O7P2	-3 cytosol
UDCPP[c]	di-trans,poly-cis-Undecaprenyl phosphate	C55H89O4P	-2 cytosol
UDP[c]	UDP	C9H11N2O12P2	-3 cytosol
UDPG[c]	UDP-glucose	C15H22N2O17P2	-2 cytosol
UDPG[e]	UDP-glucose	C15H22N2O17P2	-2 extracellular
UDPGAL[c]	UDP-D-galactose	C15H22N2O17P2	-2 cytosol
UDPGII[c]	uroporphyrinogen I	C40H44N4O16	0 Cytosol
UDPGTE[c]	UDP-glucuronate	C15H19N2O18P2	-3 cytosol
UDPNAG[c]	UDP-N-acetyl-D-glucosamine	C17H25N3O17P2	-2 cytosol
UDPNAG[e]	UDP-N-acetyl-D-glucosamine	C17H25N3O17P2	-2 extracellular
UDPNAGA[c]	UDP-N-acetyl-D-galactosamine	C17H25N3O17P2	-2 cytosol
UDPNAM[c]	UDP-N-acetylmuramate	C20H28N3O19P2	-3 cytosol
UDPNAMA[c]	UDP-N-acetylmuramoyl-L-alanine	C23H33N4O20P2	-3 cytosol
UDPNAMAG[c]	UDP-N-acetylmuramoyl-L-alanyl-D-glutamate	C28H39N5O23P2	-4 cytosol
UGLYC[c]	ureidoglycolate	C3H5N2O4	-1 Cytosol
UGMD[c]	UDP-N-acetylmuramoyl-L-alanyl-D-gamma-glutamyl-mannosamine-6-phosphate	C35H51N7O26P2	-4 cytosol
UGMDA[c]	UDP-N-acetylmuramoyl-L-alanyl-D-glutamyl-6-carboxy-L-proline	C41H61N9O28P2	-4 cytosol
UMP[c]	UDP-N-acetylmuramoyl-L-alanyl-D-glutamyl-meso-2,6-diaminopimelate	C9H11N2O9P	-2 cytosol
UMP[e]	UDP-N-acetylmuramoyl-L-alanyl-D-glutamyl-meso-2,6-diaminopimelate	C9H11N2O9P	-2 extracellular
UPGIII[c]	Uroporphyrinogen III	C40H36N4O16	-8 cytosol
UR[c]	Ureidoglycine	C3H7N3O3	0 cytosol
URA[c]	Uracil	C4H4N2O2	0 cytosol
URA[e]	Uracil(e)	C4H4N2O2	0 extracellular
URATE[c]	Urate	C5H4N4O3	0 cytosol
UREA[c]	Urea	CH4N2O	0 cytosol
UREA[e]	Urea(e)	CH4N2O	0 extracellular
UREACAR[c]	Urea-1-carboxylate	C2H3N2O3	-1 cytosol
URI[c]	Uridine	C9H12N2O6	0 cytosol
URI[e]	Uridine(e)	C9H12N2O6	0 extracellular
UROCA[c]	Urocanate	C6H5N2O2	-1 cytosol
UTP[c]	UTP	C9H11N2O15P3	-4 cytosol
VAL[c]	L-Valine	C5H11NO2	0 cytosol

VAL[e]	L-Valine(e)	C5H11NO2	0 extracellular
VB12[e]	Vitamin B12(e)	C62H88CoN13O14P	1 extracellular
XAN[c]	Xanthine	C5H4N4O2	0 cytosol
XAN[e]	Xanthine(e)	C5H4N4O2	0 extracellular
XMP[c]	Xanthosine 5'-phosphate	C10H11N4O9P	-2 cytosol
XOL[c]	Xylitol	C5H12O5	0 cytosol
XTP[c]	XTP	C10H11N4O15P3	-4 cytosol
XTSINE[e]	Xanthosine	C10H12N4O6	0 cytosol
XTSINE[c]	Xanthosine	C10H12N4O6	0 cytosol
XUL[e]	D-xylulose	C5H10O5	0 extracellular
XUL[c]	D-xylulose	C5H10O5	0 cytosol
XUL5P[c]	D-Xylulose 5-phosphate	C5H9O8P	-2 cytosol
XYL[c]	D-Xylose	C5H10O5	0 cytosol
XYL[e]	D-Xylose(e)	C5H10O5	0 extracellular
ZN[c]	Zinc	Zn	2 cytosol
ZN[e]	Zinc(e)	Zn	2 extracellular
LLAC[c]	(S)-lactic acid	C3H5O3	-1 cytosol
LLAC[e]	(S)-lactic acid	C3H5O3	-1 extracellular
MI1P[c]	1D-myo-inositol 1-phosphate	C6H11O9P	-2 cytosol
MI1P[e]	1D-myo-inositol 1-phosphate	C6H11O9P	-2 extracellular
MI3P[c]	1D-myo-inositol 3-phosphate	C6H11O9P	-2 cytosol
MI3P[e]	1D-myo-inositol 3-phosphate	C6H11O9P	-2 extracellular
MI4P[c]	1D-myo-inositol 4-phosphate	C6H11O9P	-2 cytosol
MI4P[e]	1D-myo-inositol 4-phosphate	C6H11O9P	-2 extracellular
N5CAIR[c]	5-carboxyamino-1-(5-phospho-D-ribosyl)imidazole	C9H11N3O9P	-3 cytosol
TRDOX[c]	thioredoxin disulfide	C6H7NO2S2R2	0 cytosol
TRDRD[c]	thioredoxin dithiol	C6H9NO2S2R2	0 cytosol
METOX[c]	L-methionine S-oxide	C5H11NO3S	0 cytosol
2HETPP[c]	2-(1-hydroxyethyl)thiamine diphosphate	C14H20N4O8P2S	-2 cytosol
DH3MVA[c]	2,3-dihydroxy-3-methylbutanoic acid	C5H9O4	-1 cytosol
HISTIDINAL[c]	L-Histidinal	C6H10N3O	1 cytosol
C180COA[c]	Stearoyl-CoA	C39H66N7O17P3S	-4 cytosol
GLYCYS[c]	glycylcysteine	C5H10N2O3S	0 cytosol
GLYCYS[e]	glycylcysteine	C5H10N2O3S	0 extracellular
23CAMP[e]	2',3'-cyclic AMP	C10H11N5O6P	-1 extracellular
23CCMP[e]	2',3'-cyclic CMP	C9H11N3O7P	-1 extracellular
23CGMP[e]	2',3'-cyclic GMP	C10H11N5O7P	-1 extracellular
23CUMP[e]	2',4'-cyclic UMP	C9H10N2O8P	-1 extracellular
2HPA[c]	2-Hydroxyphenylacetate	C8H7O3	-1 cytosol
2KLG[e]	2-dehydro-L-idonate	C6H9O7	-1 extracellular
2MACO[c]	(Z)-but-2-ene-1,2,3-tricarboxylic acid	C7H5O6	-3 cytosol
2MACO[e]	(Z)-but-2-ene-1,2,3-tricarboxylic acid	C7H5O6	-3 extracellular
2MAHMP[e]	4-amino-2-methyl-5-diphosphonomethylpyrimidine(3-)	C6H8N3O7P2	-3 extracellular
2MCIT[c]	(2R,3S)-2-methylcitrate(3-)	C7H7O7	-3 cytosol
2MCIT[e]	(2R,3S)-2-methylcitrate(3-)	C7H7O7	-3 extracellular
2MICIT[e]	(2S,3R)-3-hydroxybutane-1,2,3-tricarboxylic acid	C7H7O7	-3 extracellular
2MICIT[c]	(2S,3R)-3-hydroxybutane-1,2,3-tricarboxylic acid	C7H7O7	-3 cytosol
2NPMB[e]	6-methoxy-2-octaprenyl-1,4-benzoquinone	C47H70O3	0 extracellular
2NPMP[e]	6-methoxy-2-octaprenylphenol	C47H72O2	0 extracellular
2NPPP[e]	2-octaprenylphenol	C46H70O	0 extracellular
2P14NQ[e]	2-Phytyl-1,4-naphthoquinone	C30H44O2	0 extracellular
2PPG[e]	2-phosphoglycolic acid	C2H2O6P	-3 extracellular
34DHMA[e]	3,4-Dihydroxymandelaldehyde	C8H8O4	0 extracellular
34DHPEG[e]	3,4-Dihydroxyphenylethyleneglycol	C8H10O4	0 extracellular
3OPP[e]	3-oxopropanoate	C3H3O3	-1 extracellular
3SPYR[e]	3-sulfoypyruvic acid	C3H2O6S	-2 extracellular
4HBZ[e]	4-hydroxybenzoate	C7H5O3	-1 extracellular
4HDPRO[e]	cis-4-hydroxy-D-proline	C5H9NO3	0 extracellular
4HLT[e]	4-hydroxy-L-threonine	C4H9NO4	0 extracellular
4HMN[e]	4-hydroxymandelonitrile	C8H7NO2	0 extracellular
4HPACALO[e]	(Z)-(4-hydroxyphenyl)acetaldehyde oxime	C8H9NO2	0 extracellular
56DTHM[e]	5,6-dihydrothymine	C5H8N2O2	0 extracellular
5MC[e]	5-methylcytosine	C5H8N3O	1 extracellular

SOPRO[e]	5-oxo-L-prolinate	C5H6NO3	-1 extracellular
A5P[e]	D-arabinose 5-phosphate	C5H9O8P	-2 extracellular
ACACP[e]	acetyl-[acyl-carrier protein]	C13H23O8N2PRS	-1 extracellular
ACAL[e]	acetaldehyde	C2H4O	0 extracellular
ACP[e]	holo-[acyl-carrier protein]	C11H21N2O7PRS	-1 extracellular
AGMT[e]	agmatine	C5H16N4	2 extracellular
AIBUT[e]	(S)-3-aminoisobutyrate	C4H8NO2	0 extracellular
AICAD[e]	5-Amino-4-imidazolecarboxamide	C4H6N4O	0 extracellular
AKA[e]	2-oxoadipic acid	C6H6O5	-2 extracellular
ALTRNA[e]	Arg-tRNA(Arg)	C6H14N4OR	2 extracellular
AMP[e]	AMP	C10H12N5O7P	-2 extracellular
APOACP[e]	apo-[acyl-carrier protein]	R	0 extracellular
APOCARB[e]	Apo-[carboxylase]	C7H13N3O2R2	0 extracellular
AR5P[e]	alpha-D-ribose 5-phosphate	C5H9O8P	-2 extracellular
ATHR[e]	L-allothreonine	C4H9NO3	0 extracellular
ATRNA[e]	tRNA(Ala)	R	0 extracellular
BA[e]	benzoic acid	C7H5O2	-1 extracellular
BCCP[e]	Holo-[carboxylase]	C17H27N5O4SR2	0 extracellular
bFRU[e]	beta-D-fructofuranose	C6H12O6	0 extracellular
BIOMASS[e]	Biomass	R	0 extracellular
bLYS[e]	(3S)-3,6-diaminohexanoic acid	C6H15N2O2	1 extracellular
C181ACP[e]	Oleoyl-[acyl-carrier protein]	C29H53N2O8PRS	-1 extracellular
CAPTRSC[e]	N-carbamoylputrescine	C5H14N3O	1 extracellular
CDPETN[e]	CDP-ethanolamine	C11H19N4O11P2	-1 extracellular
CHIB[e]	N,N'-diacetylchitobiose	C16H28N2O11	0 extracellular
CHIB6P[e]	diacetylchitobiose-6'-phosphate	C16H27N2O14P	-2 extracellular
MCHIB6P[c]	N'-monoacetylchitobiose-6'-phosphate	C14H26N2O13P	-1 cytosol
CMP[e]	CMP	C9H12N3O8P	-2 extracellular
CMS[e]	N-carbamoylsarcosine	C4H7N2O3	-1 extracellular
COA[e]	coenzyme A	C21H32N7O16P3S	-4 extracellular
CPG[e]	coproporphyrinogen I	C36H40N4O8	-4 extracellular
CRTN[e]	creatine	C4H9N3O2	0 extracellular
CTRNA[e]	tRNA(Cys)	R	0 extracellular
CVN[e]	Cinnavalinate	C14H6N2O6	-2 extracellular
DAD5[e]	5'-deoxyadenosine	C10H13N5O3	0 extracellular
DASP[e]	D-aspartic acid	C4H6NO4	-1 extracellular
DHEND[e]	2,4-dihydroxyhept-2-enedioic acid	C7H8O6	-2 extracellular
DHF[e]	dihydrofolic acid	C19H19N7O6	-2 extracellular
DHN[e]	1,4-dihydroxy-2-naphthoic acid	C11H7O4	-1 extracellular
DHPT[e]	7,8-dihydropteroic acid	C14H13N6O3	-1 extracellular
DITP[e]	2'-deoxyinosine-5'-triphosphate	C10H11N4O13P3	-4 extracellular
DLIPO[e]	Enzyme N6-(dihydrolipoyl)lysine	C8H16NOS2R	0 extracellular
DPHE[e]	D-phenylalanine	C9H11NO2	0 extracellular
DPM[e]	dopamine	C8H12NO2	1 extracellular
DTMP[e]	dTMP	C10H13N2O8P	-2 extracellular
DTRNA[e]	tRNA(Asp)	R	0 extracellular
DXUL[e]	1-deoxy-D-xylulose	C5H10O4	0 extracellular
ETRNA[e]	tRNA(Glu)	R	0 extracellular
FRDP[e]	farnesyl pyrophosphate(3-)	C15H25O7P2	-3 extracellular
FTRNA[e]	tRNA(Phe)	R	0 extracellular
G1P[e]	D-glucopyranose 1-phosphate	C6H11O9P	-2 extracellular
G6P[e]	alpha-D-glucose 6-phosphate	C6H11O9P	-2 extracellular
GDPFUC[e]	GDP-L-fucose	C16H23N5O15P2	-2 extracellular
GLTCOA[e]	glutaryl-CoA	C26H37N7O19P3S	-5 extracellular
GLUP[e]	alpha-D-Glutamyl phosphate	C5H8NO7P	-2 extracellular
GLYA[e]	glycolic acid	C2H3O3	-1 extracellular
GLYAL[e]	D-glyceraldehyde	C3H6O3	0 extracellular
GLYCEROCHO[e]	sn-glycero-3-phosphocholine	C8H20NO6P	0 extracellular
GLYCEROPE[e]	sn-glycero-3-phosphoethanolamine	C5H14NO6P	0 extracellular
GMP[e]	GMP	C10H12N5O8P	-2 extracellular
GTRNA[e]	tRNA(Gly)	R	0 extracellular
GTSPRMD[e]	glutathionylspermidine	C17H36N6O5S	2 extracellular
GUL[e]	L-gulose	C6H12O6	0 extracellular

H2SO3[e]	sulfurous acid	HO3S	-1 extracellular
HAN[e]	3-hydroxyanthranilic acid	C7H6NO3	-1 extracellular
HCN[e]	hydrogen cyanide	CHN	0 extracellular
HCO3[e]	hydrogencarbonate	CHO3	-1 extracellular
HEMEA[e]	Heme A	C49H54FeN4O6	-2 extracellular
HEMEO[e]	heme o	C49H56FeN4O5	-2 extracellular
HOPP[e]	2-hydroxy-3-oxopropanoic acid	C3H3O4	-1 extracellular
HPRO[e]	trans-4-hydroxy-L-proline	C5H9NO3	0 extracellular
HTRNA[e]	tRNA(His)	R	0 extracellular
IDTOL[e]	L-iditol	C6H14O6	0 extracellular
INOSOSE[e]	2,4,6/3,5-pentahydroxycyclohexanone	C6H10O6	0 extracellular
IPP[e]	isopentenyl diphosphate	C5H9O7P2	-3 extracellular
ITRNA[e]	tRNA(Ile)	R	0 extracellular
KTRNA[e]	tRNA(Lys)	R	0 extracellular
LAA[e]	L-ascorbate	C6H7O6	-1 extracellular
LIPIDX[e]	lipid X	C34H64NO12P	-2 extracellular
LIPOE[e]	Enzyme N6-(lipoyl)lysine	C8H14NOS2R	0 extracellular
LLCT[e]	cystathionine	C7H14N2O4S	0 extracellular
LMETTRNA[e]	L-Methionyl-tRNA	C5H10NOSR	1 extracellular
LTRNA[e]	tRNA(Leu)	R	0 extracellular
MALCOA[e]	malonyl-CoA	C24H33N7O19P3S	-5 extracellular
METOX[e]	L-methionine S-oxide	C5H11NO3S	0 extracellular
MMSA[e]	(S)-methylmalonaldehydic acid	C4H5O3	-1 extracellular
MTHF[e]	5-methyltetrahydrofolic acid	C20H23N7O6	-2 extracellular
MTHGXL[e]	methylglyoxal	C3H4O2	0 extracellular
MTHPTGLU[e]	5-methyltetrahydropteroyltri-L-glutamic acid	C30H39N9O12	0 extracellular
MTRNA[e]	tRNA(Met)	R	0 extracellular
MURNAC6P[e]	N-acetylmuramic acid 6-phosphate	C11H17NO11P	-3 extracellular
N4HBZ[e]	4-hydroxy-3-octaprenylbenzoate	C47H69O3	-1 extracellular
NAMA6P[e]	N-acetyl-D-mannosamine 6-phosphate	C8H14NO9P	-2 extracellular
NMN[e]	NMN zwitterion	C11H14N2O8P	-1 extracellular
OAHSER[e]	O-acetyl-L-homoserine	C6H11NO4	0 extracellular
OMD[e]	homogentisic acid	C8H7O4	-1 extracellular
OPP[e]	all-trans-octaprenyl diphosphate	C40H65O7P2	-3 extracellular
OTHIO[e]	thioredoxin disulfide	C10H12N4O4S2R4	0 extracellular
PAC[e]	phenylacetic acid	C8H7O2	-1 extracellular
PAPS[e]	3'-phospho-5'-adenyllyl sulfate	C10H11N5O13P2S	-4 extracellular
PEPTIDO_eco[e]	a peptidoglycan UNITE	C40H62N8O21	-2 extracellular
PHSER[e]	O-phospho-L-homoserine	C4H8NO6P	-2 extracellular
PL[e]	1,2-diacyl-sn-glycero-3-phosphocholine	C3844H7688N100O800P100	0 extracellular
PQ[e]	phyloquinone	C31H46O2	0 extracellular
PQQ[e]	pyrroloquinoline quinone	C14H3N2O8	-3 extracellular
PQQH2[e]	pyrroloquinoline quinol	C14H5N2O8	-3 extracellular
PROGLY[e]	L-Prolinylglycine	C7H12N2O3	0 extracellular
PROP[e]	propionic acid	C3H5O2	-1 extracellular
PTCYS[e]	N-[(R)-pantothenoyl]-L-cysteine	C12H21N2O6S	-1 extracellular
PTRNA[e]	tRNA(Pro)	RH	0 extracellular
PTT[e]	pantetheine	C11H22N2O4S	0 extracellular
Q[e]	ubiquinones	C14H18O4R	0 extracellular
Q8[e]	Ubiquinone-8	C49H74O4	0 extracellular
R1P[e]	D-ribose 1-phosphate	C5H9O8P	-2 extracellular
R5P[e]	D-ribose 5-phosphate	C5H9O8P	-2 extracellular
RHA[e]	aldehydo-L-rhamnose	C6H12O5	0 extracellular
RTHIO[e]	thioredoxin dithiol	C10H14N4O4S2R4	0 extracellular
RTRNA[e]	tRNA(Arg)	R	0 extracellular
SAM[e]	S-adenosyl-L-methionine	C15H23N6O5S	1 extracellular
SCYS[e]	selenocysteine	C3H7NO2Se	0 extracellular
SELNT[e]	selenate	O4Se	0 extracellular
SME[e]	shikimic acid	C7H9O5	-1 extracellular
SOT[e]	D-glucitol	C6H14O6	0 extracellular
STRNA[e]	tRNA(Ser)	R	0 extracellular
SUCCOA[e]	succinyl-CoA	C25H35N7O19P3S	-5 extracellular
SUCCSAL[e]	succinic semialdehyde	C4H5O3	-1 extracellular

T3P1[e]	D-glyceraldehyde 3-phosphate	C3H5O6P	-2 extracellular
TAGUR[e]	D-tagaturonate	C6H9O7	-1 extracellular
TCHDIONE[e]	3,5/4-trihydroxycyclohexane-1,2-dione	C6H8O5	0 extracellular
TCYNT[e]	thiocyanic acid	CNS	-1 extracellular
THFGLU[e]	5,6,7,8-tetrahydrofolyl-L-glutamic acid	C24H27N8O9	-3 extracellular
THPTGLU[e]	tetrahydropteroyltri-L-glutamic acid	C29H37N9O12	0 extracellular
THZP[e]	4-methyl-5-(2-phosphonooxyethyl)thiazole	C6H8NO4PS	-2 extracellular
TRM[e]	tyramine	C8H12NO	1 extracellular
TTRNA[e]	tRNA(Thr)	R	0 extracellular
UAAGGLA[e]	undecaprenyldiphospho-N-acetyl-(N-acetylglucosaminy) C94H153N8O26P2		-3 extracellular
UDCDPP[e]	undecaprenyl diphosphate	C55H89O7P2	-3 extracellular
UGC[e]	(-)-ureidoglycolic acid	C3H5N2O4	-1 extracellular
UGGLA[e]	UDP-N-acetylmuramoyl-L-alanyl-gamma-D-glutamyl-L-	C40H64N9O26P2	-1 extracellular
URATE[e]	7,9-dihydro-1H-purine-2,6,8(3H)-trione	C5H4N4O3	0 extracellular
VTRNA[e]	tRNA(Val)	R	0 extracellular
WTRNA[e]	tRNA(Tyr)	RH	0 extracellular
XTP[e]	XTP	C10H11N4O15P3	-4 extracellular
YTRNA[e]	tRNA(Trp)	R	0 extracellular
PABA[e]	4-Aminobenzoate	C7H6NO2	-1 extracellular
CDPG[c]	CDP-D-glucose	C15H23N3O16P2	-2 extracellular
C161ACP[c]	palmitoleoyl-[acp]	C27H49N2O8PRS	-1 cytosol
C171ACP[c]	oleoyl-[acp]	C28H51N2O8PRS	-1 cytosol
C181ACP[c]	oleoyl-[acp]	C29H53N2O8PRS	-1 cytosol
FAMP[c]	N-Formyl-4-amino-5-aminomethyl-2-methylpyrimidine	C7H10N4O	0 cytosol
FAMP[e]	N-Formyl-4-amino-5-aminomethyl-2-methylpyrimidine	C7H10N4O	0 extracellular
AI2[e]	autoinducer-2	C5H9BO7	-1 cytosol
AI2[c]	autoinducer-2	C5H9BO7	-1 extracellular
SECYS[c]	Selenocystine	C6H12N2O4Se2	0 cytosol
SECYS[e]	Selenocystine	C6H12N2O4Se2	0 extracellular
NEU5AC[c]	N-acetyl-beta-neuramine	C11H18NO9	-1 cytosol
CDPKDG[c]	CDP-4-dehydro-6-deoxy-D-glucose	C15H21N3O15P2	-2 cytosol
PINS[c]	1-phosphatidyl-1D-myo-inositols	C11H17O13PR2	0 cytosol
HCNO[c]	cyanic acid	CNO	-1 cytosol
HCNO[e]	cyanic acid	CNO	-1 extracellular
AFA[c]	carbamate	CH2NO2	1 cytosol
S4O6[c]	tetrathionate	O6S4	-2 cytosol
TAGL[c]	Triacylglycerol	C6H5O6R3	0 cytosol
MAGL[c]	Monoacylglycerol	C4H7O4R	0 cytosol
FA[c]	fatty acid	R	-1 cytosol
GPGGL[c]	Glycerophosphoglycoglycerolipid	C20H33O20PR2	0 cytosol
DGDAGL[c]	Diglucoacyldiacylglycerol	C17H26O15R2	0 cytosol
GDAGL[c]	Monoglucoacyldiacylglycerol	C11H16O10R2	0 cytosol
EP[c]	Ethanolamine phosphate	C2H7NO4P	-1 cytosol
CP[c]	Choline phosphate	C5H14NO4P	-1 cytosol
1AG3PE[c]	1-Acyl-sn-glycero-3-phosphoethanolamine	C6H13NO7PR	0 cytosol
2AG3PE[c]	2-Acyl-sn-glycero-3-phosphoethanolamine	C6H13NO7PR	0 cytosol
1AG3PC[c]	1-Acyl-sn-glycero-3-phosphocholine	C9H20NO7PR	0 cytosol
2AG3PC[c]	2-Acyl-sn-glycero-3-phosphocholine	C9H20NO7PR	0 cytosol
PTAT[c]	5-oxopentanoate	C5H7O3	-1 cytosol
GTAT[c]	glutarate	C5H6O4	-2 cytosol
MAAC[c]	4-maleylacetoacetate	C8H6O6	-2 cytosol
I3PYR[c]	indole-3-pyruvic acid	C11H8NO3	-1 cytosol
IAAH[c]	indole acetaldehyde	C10H9NO	0 cytosol
TRPA[c]	tryptaminium	C10H13N2	1 cytosol
PCA[c]	Protocatechuate	C7H5O4	-1 cytosol
POAH[c]	phosphonoacetaldehyde	C2H4O4P	-1 cytosol
AEPO[c]	2-aminoethylphosphonate	C2H8NO3P	0 cytosol
DPUDCP[c]	ditrans,polycis-undecaprenol	C55H90O	0 cytosol
DHPP[c]	7,8-dihydroneopterin 3'-phosphate	C9H12N5O7P	-2 cytosol
THP6C[c]	5,6,7,8-tetrahydropterin-6-carboxylate	C7H8N5O3	-1 cytosol
C7DG[c]	7-carboxylato-7-deazaguanine	C7H5N4O3	-1 cytosol
PREQ0[c]	7-cyano-7-deazaguanine	C7H5N5O	0 cytosol
PREQ1[c]	7-aminomethyl-7-deazaguanine	C7H10N5O	1 cytosol

PDO[c]	propane-1,3-diol	C3H8O2	0 cytosol
HPPL[c]	3-hydroxypropanal	C3H6O2	0 cytosol
C130[c]	fatty acid(C13:0)		
C140[c]	myristate(n-C14:0)		
C150[c]	fatty acid(iso-C15:0)	C15H29O2	-1
C160[c]	palmitate(C16:0)		
C161[c]	palmitoleic acid(C16:1)		
C170[c]	fatty acid(iso-C17:0)	C17H33O2	-1
C171[c]	heptadecenoic acid(C17:1)		
C180[c]	octadecanoate (C18:0)		
C181[c]	oleic acid(C18:1)		
DAP[c]	diaminopentane	C5H16N2	2 cytosol
DAP[e]	diaminopentane	C5H16N2	2 extracellular
CO[e]	CO	CO	0 extracellular
CO[c]	CO	CO	0 cytosol
CBCCP[c]	Carboxybiotin-carboxyl-carrier protein	C18H26N5O6SR2	0 cytosol
SPRM[e]	Spermine	C10H30N4	4 extracellular
MMPA[c]	methylmercaptopropionate	C4H7O2S	-1 cytosol
VACOA[c]	vinylacetyl-CoA	C25H36N7O17P3S	-4 cytosol
VAC[c]	vinyl acetate	C4H5O2	-1 cytosol
VAC[e]	vinyl acetate	C4H5O2	-1 extracellular
ACRCoA[c]	acryloyl-CoA	C24H34N7O17P3S	-4 cytosol
CROCoA[c]	crotonyl-coenzyme A	C25H36N7O17P3S	-4 cytosol
4HBUTCoA[c]	4-hydroxybutanoyl-CoA	C25H38N7O18P3S	-4 cytosol
3HBUTCoA[c]	L-3-hydroxybutyryl-CoA	C25H38N7O18P3S	-4 cytosol
AHCN[c]	Acetyl cyanide	C3H3NO	0 cytosol
FORCoA[c]	formyl-CoA	C22H32N7O17P3S	-4 cytosol
PENT[c]	pentanoate	C5H9O2	-1 cytosol
HEXA[c]	hexanoic acid	C6H11O2	-1 cytosol
4HBUT[e]	4-hydroxybutanoate	C4H7O3	-1 extracellular
4HBUT[c]	4-hydroxybutanoate	C4H7O3	-1 cytosol
PRAL[c]	1-propanal	C3H6O	0 cytosol
PRDL[c]	(S)-propane-1,2-diol	C3H8O2	0 cytosol
PRDL[e]	(S)-propane-1,2-diol	C3H8O2	0 extracellular
HAM[c]	hydroxylamine	H3NO	0 cytosol
2HGTA[c]	(R)-2-hydroxyglutaric acid	C5H6O5	-2 cytosol
SACAL[c]	sulfoacetaldehyde	C2H3O4S	-1 cytosol
CRO[c]	crotonate	C4H5O2	-1 cytosol
OCTA[c]	octanoic acid	C8H15O2	-1 cytosol
OCTA[e]	octanoic acid	C8H15O2	-1 extracellular
H2O[c]	water	H2O	0 cytosol
H2O[e]	water	H2O	0 extracellular
ATP[c]	ATP	C10H12N5O13P3	-4 cytosol
NAD[c]	NAD(+)	C21H26N7O14P2	-1 cytosol
NADH[c]	NADH	C21H27N7O14P2	-2 cytosol
NADPH[c]	NADPH	C21H26N7O17P3	-4 cytosol
NADP[c]	NADP(+)	C21H25N7O17P3	-3 cytosol
O2[c]	dioxygen	O2	0 cytosol
O2[e]	dioxygen	O2	0 extracellular
ADP[c]	ADP	C10H12N5O10P2	-3 cytosol
PI[c]	phosphate(3-)	HO4P	-2 cytosol
PI[e]	phosphate(3-)	HO4P	-2 extracellular
COA[c]	coenzyme A	C21H32N7O16P3S	-4 cytosol
COA[e]	coenzyme A	C21H32N7O16P3S	-4 extracellular
CO2[c]	carbon dioxide	CO2	0 cytosol
CO2[e]	carbon dioxide	CO2	0 extracellular
PPI[c]	diphosphate(4-)	HO7P2	-3 cytosol
PPI[e]	diphosphate(4-)	HO7P2	-3 extracellular
NH3[c]	ammonia	H4N	1 cytosol
NH3[e]	ammonia	H4N	1 extracellular
UDP[c]	UDP	C9H11N2O12P2	-3 cytosol
UDP[e]	UDP	C9H11N2O12P2	-3 extracellular
FAD[c]	FAD	C27H31N9O15P2	-2 cytosol

PDXL5PI[c]	pyridoxal 5'-phosphate	C8H8NO6P	-2 cytosol
SAM[c]	S-adenosyl-L-methionine	C15H23N6O5S	1 cytosol
SAM[e]	S-adenosyl-L-methionine	C15H23N6O5S	1 extracellular
AMP[c]	AMP	C10H12N5O7P	-2 cytosol
AMP[e]	AMP	C10H12N5O7P	-2 extracellular
SAH[c]	S-adenosyl-L-homocysteine	C14H20N6O5S	0 cytosol
PYR[c]	pyruvic acid	C3H3O3	-1 cytosol
PYR[e]	pyruvic acid	C3H3O3	-1 extracellular
ACCOA[c]	acetyl-CoA	C23H34N7O17P3S	-4 cytosol
GLU[c]	L-glutamic acid	C5H8NO4	-1 cytosol
GLU[e]	L-glutamic acid	C5H8NO4	-1 extracellular
AKG[c]	2-oxoglutaric acid	C5H4O5	-2 cytosol
AKG[e]	2-oxoglutaric acid	C5H4O5	-2 extracellular
H2O2[c]	hydrogen peroxide	H2O2	0 cytosol
H2O2[e]	hydrogen peroxide	H2O2	0 extracellular
UDPG[c]	UDP-glucose	C15H22N2O17P2	-2 cytosol
UDPG[e]	UDP-glucose	C15H22N2O17P2	-2 extracellular
GLC[c]	D-glucopyranose	C6H12O6	0 cytosol
GLC[e]	D-glucopyranose	C6H12O6	0 extracellular
HEME[c]	ferroheme b	C34H30FeN4O4	-2 cytosol
HEME[e]	ferroheme b	C34H30FeN4O4	-2 extracellular
AC[c]	acetate	C2H3O2	-1 cytosol
AC[e]	Acetate	C2H3O2	-1 extracellular
GDP[c]	GDP	C10H12N5O11P2	-3 cytosol
OA[c]	oxaloacetic acid	C4H2O5	-2 cytosol
OA[e]	Oxaloacetate	C4H2O5	-2 extracellular
GLY[c]	glycine	C2H5NO2	0 cytosol
GLY[e]	glycine	C2H5NO2	0 extracellular
ZN[c]	Zinc	Zn	2 cytosol
ZN[e]	Zinc(e)	Zn	2 extracellular
DNA[c]	deoxyribonucleic acid	R	0 cytosol
ALA[c]	L-alanine	C3H7NO2	0 cytosol
ALA[e]	L-alanine	C3H7NO2	0 extracellular
SUCC[c]	succinic acid	C4H4O4	-2 cytosol
SUCC[e]	succinic acid	C4H4O4	-2 extracellular
UDPNAG[c]	UDP-N-acetyl-alpha-D-glucosamine	C17H25N3O17P2	-2 cytosol
UDPNAG[e]	UDP-N-acetyl-D-glucosamine	C17H25N3O17P2	-2 extracellular
GTP[e]	GTP	C10H12N5O14P3	-4 extracellular
GTP[c]	GTP	C10H12N5O14P3	-4 cytosol
LYS[c]	L-lysine	C6H15N2O2	1 cytosol
LYS[e]	L-lysine	C6H15N2O2	1 extracellular
GLX[c]	glyoxylate	C2H1O3	-1 cytosol
ASP[c]	L-aspartic acid	C4H6NO4	-1 cytosol
ASP[e]	L-aspartic acid	C4H6NO4	-1 extracellular
RGT[c]	glutathione	C10H16N3O6S	-1 cytosol
RGT[e]	glutathione	C10H16N3O6S	-1 extracellular
UDPGAL[c]	UDP-D-galactose	C15H22N2O17P2	-2 cytosol
PAPS[c]	3'-phospho-5'-adenylyl sulfate	C10H11N5O13P2S	-4 cytosol
PAPS[e]	3'-phospho-5'-adenylyl sulfate	C10H11N5O13P2S	-4 extracellular
PAP[c]	adenosine 3',5'-bismonophosphate	C10H11N5O10P2	-4 cytosol
CMP[c]	CMP	C9H12N3O8P	-2 cytosol
CMP[e]	CMP	C9H12N3O8P	-2 extracellular
FOR[c]	formate	CH1O2	-1 cytosol
FOR[e]	formate	CH1O2	-1 extracellular
SLF[c]	sulfate	O4S	-2 cytosol
SLF[e]	sulfate	O4S	-2 extracellular
FMN[c]	FMN	C17H19N4O9P	-2 cytosol
FMN[e]	FMN	C17H19N4O9P	-2 extracellular
ARG[c]	L-arginine	C6H15N4O2	1 cytosol
ARG[e]	L-arginine	C6H15N4O2	1 extracellular
CTP[c]	CTP	C9H12N3O14P3	-4 cytosol
GLN[c]	L-glutamine	C5H10N2O3	0 cytosol
GLN[e]	L-glutamine	C5H10N2O3	0 extracellular

SER[c]	L-serine	C3H7NO3	0 cytosol
SER[e]	L-serine	C3H7NO3	0 extracellular
FALD[c]	formaldehyde	CH2O	0 cytosol
THDP[c]	thiamine(1+) diphosphate	C12H16N4O7P2S	-2 cytosol
THDP[e]	thiamine(1+) diphosphate	C12H16N4O7P2S	-2 extracellular
CU[e]	Copper2(e)	Cu	2 extracellular
LAA[c]	L-ascorbate	C6H7O6	-1 cytosol
LAA[e]	L-ascorbate	C6H7O6	-1 extracellular
MET[c]	L-methionine	C5H11NO2S	0 cytosol
MET[e]	L-methionine	C5H11NO2S	0 extracellular
PEP[c]	phosphoenolpyruvate	C3H2O6P	-3 cytosol
UTP[c]	UTP	C9H11N2O15P3	-4 cytosol
CA[c]	Calcium	Ca	2 cytosol
CA[e]	Calcium(e)	Ca	2 extracellular
ORN[c]	L-ornithine	C5H13N2O2	1 cytosol
ORN[e]	L-Ornithine(e)	C5H13N2O2	1 extracellular
TRP[c]	L-tryptophan	C11H12N2O2	0 cytosol
TRP[e]	L-tryptophan	C11H12N2O2	0 extracellular
PHE[c]	L-phenylalanine	C9H11NO2	0 cytosol
PHE[e]	L-phenylalanine	C9H11NO2	0 extracellular
H[c]	hydrogen	H	1 cytosol
H[e]	hydrogen	H	1 extracellular
ITP[c]	ITP	C10H11N4O14P3	-4 cytosol
TYR[c]	L-tyrosine	C9H11NO3	0 cytosol
TYR[e]	L-tryptophan	C9H11NO3	0 extracellular
MALCOA[c]	malonyl-CoA	C24H33N7O19P3S	-5 cytosol
MALCOA[e]	malonyl-CoA	C24H33N7O19P3S	-5 extracellular
ACAL[c]	acetaldehyde	C2H4O	0 cytosol
F6P[c]	D-fructose 6-phosphate	C6H11O9P	-2 cytosol
UREA[c]	urea	CH4N2O	0 cytosol
UREA[e]	urea	CH4N2O	0 extracellular
S[e]	polysulfur	S	1 extracellular
S[c]	polysulfur	S	1 cytosol
HNO2[c]	Nitrite	NO2	-1 cytosol
HNO2[e]	Nitrite(e)	NO2	-1 extracellular
SUC[c]	sucrose	C12H22O11	0 cytosol
SUC[e]	sucrose	C12H22O11	0 extracellular
CCL[c]	Catechol	C6H6O2	0 cytosol
SUCCOA[c]	succinyl-CoA	C25H35N7O19P3S	-5 cytosol
SUCCOA[e]	succinyl-CoA	C25H35N7O19P3S	-5 extracellular
G6P[c]	alpha-D-glucose 6-phosphate	C6H11O9P	-2 cytosol
G6P[e]	alpha-D-glucose 6-phosphate	C6H11O9P	-2 extracellular
GL3P[c]	sn-glycerol 3-phosphate	C3H7O6P	-2 cytosol
GL3P[e]	sn-glycerol 3-phosphate	C3H7O6P	-2 extracellular
H2SO3[c]	sulfurous acid	HO3S	-1 cytosol
H2SO3[e]	sulfurous acid	HO3S	-1 extracellular
FRU[c]	D-fructose	C6H12O6	0 cytosol
FRU[e]	D-fructose	C6H12O6	0 extracellular
GDPMAN[c]	GDP-alpha-D-mannose	C16H23N5O16P2	-2 cytosol
CYS[c]	L-cysteine	C3H7NO2S	0 cytosol
CYS[e]	L-cysteine	C3H7NO2S	0 extracellular
PROPCOA[c]	propionyl-CoA	C24H36N7O17P3S	-4 cytosol
THF[c]	(6S)-5,6,7,8-tetrahydrofolic acid	C19H21N7O6	-2 cytosol
THF[e]	(6S)-5,6,7,8-tetrahydrofolic acid	C19H21N7O6	-2 extracellular
G1P[c]	D-glucopyranose 1-phosphate	C6H11O9P	-2 cytosol
G1P[e]	D-glucopyranose 1-phosphate	C6H11O9P	-2 extracellular
IDP[c]	IDP	C10H11N4O11P2	-3 cytosol
UMP[c]	UDP-N-acetylmuramoyl-L-alanyl-D-glutamyl-meso-2,6- γ	C9H11N2O9P	-2 cytosol
UMP[e]	UDP-N-acetylmuramoyl-L-alanyl-D-glutamyl-meso-2,6- γ	C9H11N2O9P	-2 extracellular
URA[c]	uracil	C4H4N2O2	0 cytosol
URA[e]	uracil	C4H4N2O2	0 extracellular
AN[c]	anthranilic acid	C7H6NO2	-1 cytosol
OBUT[c]	2-oxobutanoic acid	C4H5O3	-1 cytosol

T3P2[e]	glycerone phosphate	C3H5O6P	-2 cytosol
T3P2[c]	glycerone phosphate	C3H5O6P	-2 cytosol
CDP[c]	CDP	C9H12N3O11P2	-3 cytosol
PQQ[c]	pyrroloquinoline quinone	C14H3N2O8	-3 cytosol
PQQ[e]	pyrroloquinoline quinone	C14H3N2O8	-3 extracellular
CHO[c]	choline	C5H14NO	1 cytosol
CHO[e]	choline	C5H14NO	1 extracellular
GL[c]	glycerol	C3H8O3	0 cytosol
GL[e]	glycerol	C3H8O3	0 extracellular
R5P[c]	D-ribose 5-phosphate	C5H9O8P	-2 cytosol
R5P[e]	D-ribose 5-phosphate	C5H9O8P	-2 extracellular
T3P1[c]	D-glyceraldehyde 3-phosphate	C3H5O6P	-2 cytosol
T3P1[e]	D-glyceraldehyde 3-phosphate	C3H5O6P	-2 extracellular
PRPP[c]	5-O-phosphono-alpha-D-ribofuranosyl diphosphate	C5H8O14P3	-5 cytosol
BT[c]	biotin	C10H15N2O3S	-1 cytosol
BT[e]	biotin	C10H15N2O3S	-1 extracellular
RIB[c]	D-ribofuranose	C5H10O5	0 cytosol
RIB[e]	D-ribofuranose	C5H10O5	0 extracellular
FUM[c]	fumaric acid	C4H2O4	-2 cytosol
FUM[e]	fumaric acid	C4H2O4	-2 extracellular
LEU[c]	L-leucine	C6H13NO2	0 cytosol
LEU[e]	L-leucine	C6H13NO2	0 extracellular
GAL[c]	D-galactopyranose	C6H12O6	0 cytosol
GAL[e]	D-galactopyranose	C6H12O6	0 extracellular
FERI[c]	ferricytochrome c	C42H44FeN8O8S2R4	3 cytosol
FERO[c]	ferrocycytochrome c	C42H44FeN8O8S2R4	2 cytosol
OGT[c]	glutathione disulfide	C20H30N6O12S2	-2 cytosol
IPP[c]	isopentenyl diphosphate	C5H9O7P2	-3 cytosol
IPP[e]	isopentenyl diphosphate	C5H9O7P2	-3 extracellular
IMP[c]	IMP	C10H11N4O8P	-2 cytosol
DATP[c]	dATP	C10H12N5O12P3	-4 cytosol
METHOL[c]	methanol	CH4O	0 cytosol
DALA[c]	D-alanine	C3H7NO2	0 cytosol
DALA[e]	D-alanine	C3H7NO2	0 extracellular
PTRSC[c]	putrescine	C4H14N2	2 cytosol
PTRSC[e]	putrescine	C4H14N2	2 extracellular
HIS[c]	L-histidine	C6H9N3O2	0 cytosol
HIS[e]	L-histidine	C6H9N3O2	0 extracellular
C40COA[c]	Butanoyl-CoA	C25H38N7O17P3S	-4 cytosol
MYOI[c]	myo-inositol	C6H12O6	0 cytosol
MYOI[e]	myo-inositol	C6H12O6	0 extracellular
RFER[c]	Reduced ferredoxin	R	0 cytosol
OFER[c]	Oxidized ferredoxin	R	0 cytosol
NAG[c]	N-acetyl-D-glucosamine	C8H15NO6	0 cytosol
NAG[e]	N-acetyl-D-glucosamine	C8H15NO6	0 extracellular
OMVAL[c]	3-methyl-2-oxobutanoate	C5H7O3	-1 cytosol
METTHF[c]	(6R)-5,10-methylenetetrahydrofolic acid	C20H21N7O6	-2 cytosol
GMP[c]	GMP	C10H12N5O8P	-2 cytosol
GMP[e]	GMP	C10H12N5O8P	-2 extracellular
AD[c]	adenine	C5H5N5	0 cytosol
AD[e]	adenine	C5H5N5	0 extracellular
PRO[c]	L-proline	C5H9NO2	0 cytosol
PRO[e]	L-proline	C5H9NO2	0 extracellular
MAL[c]	(S)-malic acid	C4H4O5	-2 cytosol
MAL[e]	(S)-malic acid	C4H4O5	-2 extracellular
ASN[c]	L-asparagine	C4H8N2O3	0 cytosol
ASN[e]	L-asparagine	C4H8N2O3	0 extracellular
NICD[c]	nicotinamide	C6H6N2O	0 cytosol
PMTCOA[c]	palmitoyl-CoA(n-C16:0 CoA)	C37H62N7O17P3S	-4 cytosol
HCYS[c]	L-homocysteine	C4H9NO2S	0 cytosol
HCYS[e]	L-Homocysteine	C4H9NO2S	0 extracellular
4HBZ[c]	4-hydroxybenzoate	C7H5O3	-1 cytosol
4HBZ[e]	4-hydroxybenzoate	C7H5O3	-1 extracellular

PL[c]	1,2-diacyl-sn-glycero-3-phosphocholine	C8H17N06PR2	-1 cytosol
PL[e]	1,2-diacyl-sn-glycero-3-phosphocholine	C10H18N08PR2	0 extracellular
CIT[c]	citric acid	C6H5O7	-3 cytosol
CIT[e]	citric acid	C6H5O7	-3 extracellular
MAN[c]	D-mannopyranose	C6H12O6	0 cytosol
MAN[e]	D-mannopyranose	C6H12O6	0 extracellular
GLYA[c]	glycolic acid	C2H3O3	-1 cytosol
GLYA[e]	glycolic acid	C2H3O3	-1 extracellular
PROP[c]	propionic acid	C3H5O2	-1 cytosol
PROP[e]	propionic acid	C3H5O2	-1 extracellular
ACTAC[c]	Acetoacetate	C4H5O3	-1 cytosol
ACTAC[e]	Acetoacetate(e)	C4H5O3	-1 extracellular
PHPYR[c]	keto-phenylpyruvic acid	C9H7O3	-1 cytosol
PHPYR[e]	Phenylpyruvate	C9H7O3	-1 extracellular
UDPGTE[c]	UDP-glucuronate	C15H19N2O18P2	-3 cytosol
HPYR[c]	3-hydroxypyruvic acid	C3H3O4	-1 cytosol
CAP[c]	carbamoyl phosphate	CH2NO5P	-2 cytosol
5MTA[c]	5'-Methylthioadenosine	C11H15N5O3S	0 cytosol
5MTA[e]	5'-Methylthioadenosine	C11H15N5O3S	0 extracellular
COBAL2[c]	Co2+	Co	2 cytosol
COBAL2[e]	Co2+[e]	Co	2 extracellular
THY[c]	thymine	C5H6N2O2	0 cytosol
THY[e]	thymine	C5H6N2O2	0 extracellular
AGMT[c]	agmatine	C5H16N4	2 cytosol
AGMT[e]	agmatine	C5H16N4	2 extracellular
BA[c]	benzoic acid	C7H5O2	-1 cytosol
BA[e]	benzoic acid	C7H5O2	-1 extracellular
XYL[c]	D-Xylose	C5H10O5	0 cytosol
XYL[e]	D-Xylose(e)	C5H10O5	0 extracellular
GLYCOGEN[c]	glycogen	C6H10O5	0 cytosol
VAL[c]	L-valine	C5H11NO2	0 cytosol
VAL[e]	L-valine	C5H11NO2	0 extracellular
GLYN[c]	glycerone	C3H6O3	0 cytosol
CELLOB[c]	cellobiose	C12H22O11	0 cytosol
CELLOB[e]	cellobiose	C12H22O11	0 extracellular
LLAC[c]	(S)-lactic acid	C3H5O3	-1 cytosol
THR[c]	L-threonine	C4H9NO3	0 cytosol
THR[e]	L-threonine	C4H9NO3	0 extracellular
ETHAM[c]	ethanolamine	C2H8NO	1 cytosol
ETHAM[e]	ethanolamine	C2H8NO	1 extracellular
GLCUNT[c]	D-glucopyranuronic acid	C6H9O7	-1 cytosol
GLCUNT[e]	D-glucopyranuronic acid	C6H9O7	-1 extracellular
COBCE[c]	Cobamide coenzyme	C72H100CoN18O17P	0 cytosol
COBCE[e]	Cobamide coenzyme	C72H100CoN18O17P	0 extracellular
3PG[c]	3-phospho-D-glyceric acid	C3H4O7P	-3 cytosol
3PG[e]	3-Phospho-D-glycerate	C3H4O7P	-3 extracellular
GLCN15LAC[c]	D-glucono-1,5-lactone	C6H10O6	0 cytosol
RL5P[c]	D-ribose 5-phosphate	C5H9O8P	-2 cytosol
UDPNAGA[c]	UDP-N-acetyl-D-galactosamine	C17H25N3O17P2	-2 cytosol
KDG[c]	2-dehydro-3-deoxy-D-gluconic acid	C6H9O6	-1 cytosol
DADP[c]	dADP	C10H12N5O9P2	-3 cytosol
MLT[c]	maltose	C12H22O11	0 cytosol
MLT[e]	maltose	C12H22O11	0 extracellular
OXAL[c]	oxalate	C2O4	-2 cytosol
OXAL[e]	oxalate	C2O4	-2 cytosol
ADN[c]	adenosine	C10H13N5O4	0 cytosol
ADN[e]	adenosine	C10H13N5O4	0 extracellular
SARC[c]	sarcosine	C3H7NO2	0 cytosol
DT[c]	thymidine	C10H14N2O5	0 cytosol
DT[e]	Thymidine(e)	C10H14N2O5	0 extracellular
DGLU[c]	D-glutamic acid	C5H8NO4	-1 cytosol
bDGLC[c]	beta-D-glucose	C6H12O6	0 cytosol
3OPP[c]	3-oxopropanoate	C3H3O3	-1 cytosol

3OPP[e]	3-oxopropanoate	C3H3O3	-1 extracellular
APS[c]	5'-adenylyl sulfate	C10H12N5O10PS	-2 cytosol
ACTP[c]	Acetyl phosphate	C2H3O5P	-2 cytosol
ACP[c]	holo-[acyl-carrier protein]	C11H21N2O7PRS	-1 cytosol
ACP[e]	holo-[acyl-carrier protein]	C11H21N2O7PRS	-1 extracellular
PCACE[c]	3,4-dihydroxybenzoic acid	C7H5O4	-1 cytosol
XUL5P[c]	D-xylulose 5-phosphate	C5H9O8P	-2 cytosol
SUCCSAL[c]	succinic semialdehyde	C4H5O3	-1 cytosol
SUCCSAL[e]	succinic semialdehyde	C4H5O3	-1 extracellular
4MOP[c]	4-methyl-2-oxopentanoate	C6H9O3	-1 cytosol
FTHF[c]	10-formyltetrahydrofolic acid	C20H21N7O7	-2 cytosol
DMPP[c]	prenyl diphosphate	C5H9O7P2	-3 cytosol
13PDG[c]	3-phospho-D-glyceroyl phosphate	C3H4O10P2	-4 cytosol
K[c]	Potassium	K	1 cytosol
K[e]	Potassium(e)	K	1 extracellular
DCMP[c]	dCMP	C9H12N3O7P	-2 cytosol
GN[c]	guanine	C5H5N5O	0 cytosol
GN[e]	guanine	C5H5N5O	0 extracellular
LACTOSE[c]	Lactose	C12H22O11	0 cytosol
LACTOSE[e]	Lactose	C12H22O11	0 extracellular
HNO3[c]	Nitrate	NO3	-1 cytosol
HNO3[e]	Nitrate(e)	NO3	-1 extracellular
TAUR[c]	Taurine	C2H7NO3S	0 cytosol
TAUR[e]	Taurine(e)	C2H7NO3S	0 extracellular
BUAC[c]	Butanoic acid	C4H7O2	-1 cytosol
BUAC[e]	Butanoic acid(e)	C4H7O2	-1 extracellular
SOR[c]	L-sorbopyranose	C6H12O6	0 cytosol
SOR[e]	L-sorbopyranose	C6H12O6	0 extracellular
LIPO[c]	lipamide	C8H15NOS2	0 cytosol
PDXAL[c]	pyridoxal	C8H9NO3	0 cytosol
CHOR[c]	chorismic acid	C10H8O6	-2 cytosol
CHOR[e]	Chorismate	C10H8O6	-2 extracellular
NICA[c]	nicotinic acid	C6H4NO2	-1 cytosol
NICA[e]	nicotinic acid	C6H4NO2	-1 extracellular
PHEN[c]	prephenic acid	C10H8O6	-2 cytosol
RIBFLAV[c]	riboflavin	C17H20N4O6	0 cytosol
RIBFLAV[e]	riboflavin	C17H20N4O6	0 extracellular
LAC[c]	(R)-lactic acid	C3H5O3	-1 cytosol
LAC[e]	(R)-lactic acid	C3H5O3	-1 extracellular
GLCNT[c]	D-gluconic acid	C6H11O7	-1 cytosol
GLCNT[e]	D-Gluconic acid	C6H11O7	-1 extracellular
LARAB[c]	L-arabinopyranose	C5H10O5	0 cytosol
LARAB[e]	L-arabinopyranose	C5H10O5	0 extracellular
HYXN[c]	hypoxanthine	C5H4N4O	0 cytosol
HYXN[e]	Hypoxanthine(e)	C5H4N4O	0 extracellular
HSER[c]	L-homoserine	C4H9NO3	0 cytosol
GLAL[c]	Glycolaldehyde	C2H4O2	0 cytosol
CDPDG[c]	CDP-diacylglycerol	C44.7H78.8N3O15P2	-2 cytosol
MAN6P[c]	D-Mannose 6-phosphate	C6H11O9P	-2 cytosol
E4P[c]	D-erythrose 4-phosphate	C4H7O7P	-2 cytosol
H2S[c]	hydrogen sulfide	H2S	0 cytosol
H2S[e]	hydrogen sulfide	H2S	0 extracellular
DGTP[c]	2'-Deoxyguanosine 5'-triphosphate	C10H12N5O13P3	-4 cytosol
HCO3[c]	hydrogencarbonate	CHO3	-1 cytosol
HCO3[e]	hydrogencarbonate	CHO3	-1 extracellular
ANIL[c]	Aniline	C6H7N	0 cytosol
INS[c]	inosine	C10H12N4O5	0 cytosol
INS[e]	Inosine(e)	C10H12N4O5	0 extracellular
OROA[c]	orotic acid	C5H3N2O4	-1 cytosol
OROA[e]	Orotate	C5H3N2O4	-1 extracellular
URI[c]	uridine	C9H12N2O6	0 cytosol
URI[e]	Uridine(e)	C9H12N2O6	0 extracellular
CRTN[c]	creatine	C4H9N3O2	0 cytosol

CRTN[e]	creatine	C4H9N3O2	0 extracellular
ADPR[c]	ADP-D-ribose	C15H21N5O14P2	-2 cytosol
MG[c]	Magnesium	Mg	2 cytosol
MG[e]	Magnesium(e)	Mg	2 extracellular
XUL[c]	D-xylulose	C5H10O5	0 cytosol
XUL[e]	D-xylulose	C5H10O5	0 extracellular
ICIT[c]	isocitric acid	C6H5O7	-3 cytosol
PDXI[c]	pyridoxine	C8H11NO3	0 cytosol
PDXI[e]	pyridoxine	C8H11NO3	0 extracellular
SPRMD[c]	spermidine	C7H22N3	3 cytosol
SPRMD[e]	spermidine	C7H22N3	3 extracellular
THJ[c]	thiosulfate(1-)	HS2O3	-1 cytosol
THJ[e]	thiosulfate(1-)	HS2O3	-1 extracellular
AKA[c]	2-oxoadipic acid	C6H6O5	-2 cytosol
AKA[e]	2-oxoadipic acid	C6H6O5	-2 extracellular
GDPFUC[c]	GDP-L-fucose	C16H23N5O15P2	-2 cytosol
GDPFUC[e]	GDP-L-fucose	C16H23N5O15P2	-2 extracellular
CITR[c]	L-citrulline	C6H13N3O3	0 cytosol
CITR[e]	L-citrulline	C6H13N3O3	0 extracellular
KYN[c]	L-Kynurenine	C10H12N2O3	0 cytosol
GLCN[c]	D-Glucosamine(e)	C6H14NO5	1 cytosol
GLCN[e]	D-Glucosamine(e)	C6H14NO5	1 extracellular
DG[c]	2'-deoxyguanosine	C10H13N5O4	0 cytosol
DG[e]	Deoxyguanosine(e)	C10H13N5O4	0 extracellular
AACCOA[c]	Acetoacetyl-CoA	C25H36N7O18P3S	-4 cytosol
GALUNT[c]	aldehydo-D-galacturonate	C6H9O7	-1 cytosol
GALUNT[e]	aldehydo-D-galacturonate	C6H9O7	-1 extracellular
GABA[c]	gamma-aminobutyric acid	C4H9NO2	0 cytosol
GABA[e]	4-Aminobutanoate	C4H9NO2	0 extracellular
DORO[c]	(S)-dihydroorotic acid	C5H5N2O4	-1 cytosol
DORO[e]	(S)-Dihydroorotate	C5H5N2O4	-1 extracellular
GRDP[c]	geranyl diphosphate	C10H17O7P2	-3 cytosol
RTHIO[c]	thioredoxin dithiol	C10H14N4O4S2R4	0 cytosol
RTHIO[e]	thioredoxin dithiol	C10H14N4O4S2R4	0 extracellular
TRDRD[c]	thioredoxin dithiol	C6H9NO2S2R2	0 cytosol
OTHIO[c]	thioredoxin disulfide	C10H12N4O4S2R4	0 cytosol
OTHIO[e]	thioredoxin disulfide	C10H12N4O4S2R4	0 extracellular
TRDOX[c]	thioredoxin disulfide	C6H7NO2S2R2	0 cytosol
PG[c]	phosphatidylglycerol	C38.7H73.8O10P	-1 cytosol
PG[e]	Phosphatidylglycerol	C38.7H73.8O10P	-1 extracellular
D6PGC[c]	6-phospho-D-gluconic acid	C6H10O10P	-3 cytosol
2MOP[c]	2-Methyl-3-oxopropanoate	C4H5O3	-1 cytosol
PE[c]	phosphatidylethanolamine	C37.7H73.8NO8P	0 cytosol
GA6P[c]	alpha-D-glucosamine 6-phosphate	C6H13NO8P	-1 cytosol
GERGDP[c]	Geranylgeranyl diphosphate	C20H33O7P2	-3 cytosol
FDP[c]	beta-D-fructofuranose 1,6-bisphosphate	C6H10O12P2	-4 cytosol
H3MCOA[c]	(S)-3-Hydroxy-3-methylglutaryl-CoA	C27H39N7O20P3S	-5 cytosol
NAGA6P[c]	N-acetyl-D-glucosamine 6-phosphate	C8H14NO9P	-2 cytosol
DAMP[c]	dAMP	C10H12N5O6P	-2 cytosol
DGDP[c]	dGDP	C10H12N5O10P2	-3 cytosol
DGMP[c]	dGMP	C10H12N5O7P	-2 cytosol
DTDP[c]	dTDP	C10H13N2O11P2	-3 cytosol
DTMP[c]	dTMP	C10H13N2O8P	-2 cytosol
DTMP[e]	dTMP	C10H13N2O8P	-2 extracellular
DUMP[c]	dUMP	C9H11N2O8P	-2 cytosol
URATE[c]	7,9-dihydro-1H-purine-2,6,8(3H)-trione	C5H4N4O3	0 cytosol
URATE[e]	7,9-dihydro-1H-purine-2,6,8(3H)-trione	C5H4N4O3	0 extracellular
STAR[c]	Starch(n)	C48H80O40	0 cytosol
STARI[c]	Starch(n-1)	C24H40O20	0 cytosol
THME[c]	thiamine	C12H17N4OS	1 cytosol
THME[e]	thiamine	C12H17N4OS	1 extracellular
XOL[e]	Xylitol	C5H12O5	0 cytosol
CYTS[c]	cytosine	C4H5N3O	0 cytosol

CYTS[e]	cytosine	C4H5N3O	0 extracellular
MALN[c]	Malonate	C3H2O4	-2 cytosol
MALN[e]	Malonate(e)	C3H2O4	-2 extracellular
XAN[c]	9H-xanthine	C5H4N4O2	0 cytosol
XAN[e]	9H-xanthine	C5H4N4O2	0 extracellular
GSN[c]	guanosine	C10H13N5O5	0 cytosol
GSN[e]	guanosine	C10H13N5O5	0 extracellular
QH2[c]	ubiquinol	C14H20O4R	0 cytosol
MNT[c]	D-mannitol	C6H14O6	0 cytosol
MNT[e]	D-mannitol	C6H14O6	0 extracellular
PENI[c]	Penicillin	C9H11N2O4S	-1 cytosol
Q[c]	ubiquinones	C14H18O4R	0 cytosol
Q[e]	ubiquinones	C14H18O4R	0 extracellular
DASP[c]	D-aspartic acid	C4H6NO4	-1 cytosol
DASP[e]	D-aspartic acid	C4H6NO4	-1 extracellular
ILE[c]	L-isoleucine	C6H13NO2	0 cytosol
ILE[e]	L-isoleucine	C6H13NO2	0 extracellular
METH[c]	Methanethiol	CH4S	0 cytosol
DHF[c]	dihydrofolic acid	C19H19N7O6	-2 cytosol
DHF[e]	dihydrofolic acid	C19H19N7O6	-2 extracellular
PA[c]	phosphatidic acid	C35.7H66.8O8P	-2 cytosol
PA[e]	1,2-diacyl-sn-glycerol 3-phosphate	C35.7H66.8O8P	-2 extracellular
LACAL[c]	(S)-lactaldehyde	C3H6O2	0 cytosol
DIHURA[c]	5,6-dihydrouracil	C4H6N2O2	0 cytosol
AMIEVUL[c]	5-aminolevulinate	C5H9NO3	0 cytosol
DIOXPEN[c]	2,5-Dioxopentanoate	C5H5O4	-1 cytosol
CAPTRSC[c]	N-carbamoylputrescine	C5H14N3O	1 cytosol
CAPTRSC[e]	N-carbamoylputrescine	C5H14N3O	1 extracellular
NAORN[c]	N(2)-acetyl-L-ornithine	C7H14N2O3	0 cytosol
CAASP[c]	N-carbamoyl-L-aspartic acid	C5H6N2O5	-2 cytosol
FORGLU[c]	N-Formimino-L-glutamate	C6H9N2O4	-1 cytosol
MTHF[c]	5-methyltetrahydrofolic acid	C20H23N7O6	-2 cytosol
MTHF[e]	5-methyltetrahydrofolic acid	C20H23N7O6	-2 extracellular
ASPSA[c]	L-aspartate 4-semialdehyde	C4H7NO3	0 cytosol
METHF[c]	(6R)-5,10-methenyltetrahydrofolic acid	C20H20N7O6	-1 cytosol
GAL1P[c]	alpha-D-Galactose 1-phosphate	C6H11O9P	-2 cytosol
S17BP[c]	sedoheptulose 1,7-bisphosphate	C7H14O13P2	-2 cytosol
FRDP[c]	farnesyl pyrophosphate	C15H25O7P2	-3 cytosol
FRDP[e]	farnesyl pyrophosphate(3-)	C15H25O7P2	-3 extracellular
NMN[c]	NMN zwitterion	C11H14N2O8P	-1 cytosol
NMN[e]	NMN zwitterion	C11H14N2O8P	-1 extracellular
DCTP[c]	dCTP	C9H12N3O13P3	-4 cytosol
DTTP[c]	dTTP	C10H13N2O14P3	-4 cytosol
DUTP[c]	dUTP	C9H11N2O14P3	-4 cytosol
IND[c]	indole	C8H7N	0 cytosol
IND[e]	indole	C8H7N	0 extracellular
ETOL[c]	ethanol	C2H6O	0 cytosol
ETOL[e]	ethanol	C2H6O	0 extracellular
CYTD[c]	cytidine	C9H13N3O5	0 cytosol
CYTD[e]	Cytidine(e)	C9H13N3O5	0 extracellular
TRM[c]	tyramine	C8H12NO	1 cytosol
TRM[e]	tyramine	C8H12NO	1 extracellular
FORMIE[c]	Formamide	CH3NO	0 cytosol
RAF[c]	raffinose	C18H32O16	0 cytosol
RAF[e]	raffinose	C18H32O16	0 extracellular
SME[c]	shikimic acid	C7H9O5	-1 cytosol
SME[e]	shikimic acid	C7H9O5	-1 extracellular
ADPGLC[c]	ADP alpha-D-glucoside	C16H23N5O15P2	-2 cytosol
ATTI[c]	Allantoate	C4H7N4O4	-1 cytosol
FOL[c]	folic acid	C19H17N7O6	-2 cytosol
FOL[e]	Folate	C19H17N7O6	-2 extracellular
CYSTE[c]	L-cysteic acid	C3H6NO5S	-1 cytosol
CYSTE[e]	L-cysteic acid	C3H6NO5S	-1 extracellular

RHA[c]	aldehydo-L-rhamnose	C6H12O5	0 cytosol
RHA[e]	aldehydo-L-rhamnose	C6H12O5	0 extracellular
LRL[c]	L-ribulose	C5H10O5	0 cytosol
CDPGL[c]	CDP-glycerol	C12H19N3O13P2	-2 cytosol
CDPGL[e]	CDP-glycerol	C12H19N3O13P2	-2 extracellular
MANOE[c]	D-mannonic acid	C6H11O7	-1 cytosol
HTAUR[c]	hypotaurine zwitterion	C2H7NO2S	0 cytosol
PANT[c]	pantoic acid	C6H11O4	-1 cytosol
DU[c]	2'-deoxyuridine	C9H12N2O5	0 cytosol
DU[e]	2'-deoxyuridine	C9H12N2O5	0 extracellular
GLTCOA[c]	glutaryl-CoA	C26H37N7O19P3S	-5 cytosol
GLTCOA[e]	glutaryl-CoA	C26H37N7O19P3S	-5 extracellular
LAOL[c]	L-Arabitol	C5H12O5	0 cytosol
NO[c]	Nitric oxide	NO	0 cytosol
PDXAM[c]	pyridoxamine	C8H13N2O2	1 cytosol
PPPI[c]	triphosphate(5-)	H1O10P3	-4 cytosol
CO2ALA[e]	Cob(II)alamin(e)	C62H87CoN13O14P	-1 extracellular
LLCT[c]	cystathionine	C7H14N2O4S	0 cytosol
LLCT[e]	cystathionine	C7H14N2O4S	0 extracellular
OMD[c]	homogentisic acid	C8H7O4	-1 cytosol
OMD[e]	homogentisic acid	C8H7O4	-1 extracellular
MTHGXL[c]	methylglyoxal	C3H4O2	0 cytosol
MTHGXL[e]	methylglyoxal	C3H4O2	0 extracellular
MTART[c]	meso-Tartaric acid	C4H4O6	-2 cytosol
ABAL[c]	4-aminobutanal	C4H10NO	1 cytosol
TAGUR[c]	D-tagaturonate	C6H9O7	-1 cytosol
TAGUR[e]	D-tagaturonate	C6H9O7	-1 extracellular
DA[c]	2'-deoxyadenosine	C10H13N5O3	0 cytosol
DA[e]	Deoxyadenosine(e)	C10H13N5O3	0 extracellular
PABA[c]	4-Aminobenzoate	C7H6NO2	-1 cytosol
CDPETN[c]	CDP-ethanolamine	C11H19N4O11P2	-1 cytosol
CDPETN[e]	CDP-ethanolamine	C11H19N4O11P2	-1 extracellular
BETALD[c]	Betaine aldehyde	C5H12NO	1 cytosol
GLYAL[c]	D-glyceraldehyde	C3H6O3	0 cytosol
GLYAL[e]	D-glyceraldehyde	C3H6O3	0 extracellular
DHLIPO[c]	dihydrolipoamide	C8H17NOS2	0 cytosol
HBENZ[c]	3-hydroxybenzoate	C7H5O3	-1 cytosol
HBENZ[e]	3-hydroxybenzoate	C7H5O3	-1 extracellular
PHACAL[c]	Phenylacetaldehyde	C8H8O	0 cytosol
UGC[c]	(-)-ureidoglycolic acid	C3H5N2O4	-1 cytosol
UGC[e]	(-)-ureidoglycolic acid	C3H5N2O4	-1 extracellular
UGLYC[c]	ureidoglycolate	C3H5N2O4	-1 cytosol
SULALA[c]	3-sulfin-L-alanine	C3H6NO4S	-1 cytosol
R1P[c]	D-ribose 1-phosphate	C5H9O8P	-2 cytosol
R1P[e]	D-ribose 1-phosphate	C5H9O8P	-2 extracellular
NAGLU[c]	N-acetyl-L-glutamic acid	C7H9NO5	-2 cytosol
P5P[c]	pyridoxine 5'-phosphate	C8H10NO6P	-2 cytosol
DHBENZ[c]	2,5-dihydroxybenzoate	C7H5O4	-1 cytosol
IBCOA[c]	Isobutyryl-CoA	C25H38N7O17P3S	-4 cytosol
2PG[c]	2-phospho-D-glyceric acid	C3H4O7P	-3 cytosol
HAN[c]	3-hydroxyanthranilic acid	C7H6NO3	-1 cytosol
HAN[e]	3-hydroxyanthranilic acid	C7H6NO3	-1 extracellular
MAN1P[c]	D-mannose 1-phosphate	C6H11O9P	-2 cytosol
DAGL[c]	1,2-Diacyl-sn-glycerol	C35.7H67.8O5	0 cytosol
MNT1P[c]	D-Mannitol 1-phosphate	C6H13O9P	-2 cytosol
NAMA[c]	N-acetyl-D-mannosamine	C8H15NO6	0 cytosol
PDXAM5PI[c]	pyridoxamine 5'-phosphate	C8H12N2O5P	-1 cytosol
4HMN[c]	4-hydroxymandelonitrile	C8H7NO2	0 cytosol
4HMN[e]	4-hydroxymandelonitrile	C8H7NO2	0 extracellular
XMP[c]	5'-xanthylic acid	C10H11N4O9P	-2 cytosol
XMP[e]	5'-xanthylic acid	C10H11N4O9P	-2 extracellular
DAPIM[c]	2,6-diaminopimelic acid	C7H14N2O4	0 cytosol
GC[c]	L-gamma-glutamyl-L-cysteine	C8H13N2O5S	-1 cytosol

GLYCEROCHO[c]	sn-glycero-3-phosphocholine	C8H21NO6P	0 cytosol
GLYCEROCHO[e]	sn-glycero-3-phosphocholine	C8H21NO6P	0 extracellular
3MOP[c]	(S)-3-methyl-2-oxovalerate	C6H9O3	-1 cytosol
DR1P[c]	2-deoxy-D-ribofuranose 1-phosphate	C5H9O7P	-2 cytosol
DR5P[c]	2-deoxy-D-ribose 5-phosphate	C5H9O7P	-2 cytosol
DH4DGLC[c]	5-dehydro-4-deoxy-D-glucarate	C6H6O7	-2 cytosol
MDAPIM[c]	meso-2,6-diaminopimelic acid	C7H14N2O4	0 cytosol
MDAPIM[e]	meso-2,6-Diaminoheptanedioate	C7H14N2O4	0 extracellular
AGL3P[c]	1-acyl-sn-glycerol 3-phosphate	C19.35H36.90O7P	-2 cytosol
MMCOA[c]	(S)-Methylmalonyl-CoA	C25H35N7O19P3S	-5 cytosol
DTDPDDG[c]	dTDP-4-dehydro-6-deoxy-alpha-D-glucose	C16H22N2O15P2	-2 cytosol
DTDPDDM[c]	dTDP-4-dehydro-6-deoxy-L-mannose	C16H22N2O15P2	-2 cytosol
TRE6P[c]	alpha,alpha-trehalose 6-phosphate	C12H21O14P	-2 cytosol
INOSOSE[c]	2,4,6/3,5-pentahydroxycyclohexanone	C6H10O6	0 cytosol
INOSOSE[e]	2,4,6/3,5-pentahydroxycyclohexanone	C6H10O6	0 extracellular
UDPNAMAG[c]	UDP-N-acetylmuramoyl-L-alanyl-D-glutamic acid	C28H39N5O23P2	-4 cytosol
CHL[c]	Chloride	Cl	-1 cytosol
CHL[e]	Chloride(e)	Cl	-1 extracellular
XTP[c]	XTP	C10H11N4O15P3	-4 cytosol
XTP[e]	XTP	C10H11N4O15P3	-4 extracellular
O2S[e]	superoxide	O2	-1 extracellular
O2S[c]	superoxide	O2	-1 cytosol
DCDP[c]	dCDP	C9H12N3O10P2	-3 cytosol
AMYLS1[c]	Amylose(n)	C42H70O35	0 cytosol
AMYLS2[c]	Amylose(n+1)	C48H80O40	0 cytosol
GLYB[c]	Glycine betaine	C5H11NO2	0 cytosol
GLYB[e]	Glycine betaine	C5H11NO2	0 extracellular
DEX[c]	Dextrin(n)	C24H40O20	0 cytosol
DEX1[c]	Dextrin(n-1)	C12H20O10	0 cytosol
DSER[c]	D-Serine	C3H7NO3	0 cytosol
DSER[e]	D-Serine(e)	C3H7NO3	0 extracellular
SIHM[c]	Siroheme	C42H36FeN4O16	-8 cytosol
SPRM[c]	Spermine	C10H30N4	4 cytosol
SQL[c]	Squalene	C30H50	0 cytosol
DPRO[c]	D-proline	C5H9NO2	0 cytosol
IDON[c]	L-Idonate	C6H11O7	-1 cytosol
UROCA[c]	Urocanate	C6H5N2O2	-1 cytosol
WTRNA[c]	tRNA(Tyr)	RH	0 cytosol
WTRNA[e]	tRNA(Tyr)	RH	0 extracellular
CRTNN[c]	creatinine	C4H7N3O	0 cytosol
CYSD[c]	D-Cysteine	C3H7NO2S	0 cytosol
SOT[c]	D-glucitol	C6H14O6	0 cytosol
SOT[e]	D-glucitol	C6H14O6	0 extracellular
GULNT[c]	L-gulonate	C6H11O7	-1 cytosol
ACTN[c]	(R)-Acetoin	C4H8O2	0 cytosol
ACTN[e]	(R)-Acetoin	C4H8O2	0 extracellular
ALTRN[c]	D-Altronate	C6H11O7	-1 cytosol
GLUCARATE[c]	D-glucaric acid	C6H8O8	-2 cytosol
DGLN[c]	D-Glutamine	C5H10N2O3	0 cytosol
AG[c]	L-arogenic acid	C10H12NO5	-1 cytosol
MQN8[c]	Menaquinone 8	C51H72O2	0 cytosol
PTT[c]	pantetheine	C11H22N2O4S	0 cytosol
PTT[e]	pantetheine	C11H22N2O4S	0 extracellular
DTDPGLC[c]	dTDP-glucose	C16H24N2O16P2	-2 cytosol
3OA[c]	3-oxoadipate(2-)	C6H6O5	-2 cytosol
3OA[e]	3-oxoadipate(2-)	C6H6O5	-2 extracellular
CO1ALA[e]	Cob(1)alamin(e)	C62H88CoN13O14P	-1 extracellular
DMET[c]	D-methionine	C5H11NO2S	0 cytosol
DMET[e]	D-methionine	C5H11NO2S	0 extracellular
DNAD[c]	deamido-NAD(+)	C21H24N6O15P2	-2 cytosol
HISOL[c]	L-histidinol	C6H12N3O	1 cytosol
RHAMN[c]	L-rhamnulose	C6H12O5	0 cytosol
PNTO[c]	(R)-pantothenate	C9H16NO5	-1 cytosol

PNT0[e]	(R)-pantothenate	C9H16NO5	-1 extracellular
DGALCTR[c]	D-Galactarate	C6H8O8	-2 cytosol
DGALAC[c]	D-Galactonate	C6H11O7	-1 cytosol
DGALAC[e]	D-Galactonate(e)	C6H11O7	-1 extracellular
DC[c]	2'-deoxycytidine	C9H13N3O4	0 cytosol
DC[e]	2'-deoxycytidine	C9H13N3O4	0 extracellular
DPCOA[c]	3'-dephospho-CoA	C21H33N7O13P2S	-2 cytosol
ICHOR[c]	isochorismate	C10H8O6	-2 cytosol
LALATRNA[c]	L-Alanyl-tRNA	C3H6NOR	1 cytosol
PRPECO[c]	Propenoyl-CoA	C24H34N7O17P3S	-4 cytosol
TART[c]	L-tartarate	C4H4O6	-2 cytosol
ACLAC[c]	2-acetyllactic acid	C5H7O4	-1 cytosol
FRUTN[c]	D-fructofuranuronic acid	C6H9O7	-1 cytosol
56DTHM[c]	5,6-dihydrothymine	C5H8N2O2	0 cytosol
56DTHM[e]	5,6-dihydrothymine	C5H8N2O2	0 extracellular
DHPT[c]	7,8-dihydropteroic acid	C14H13N6O3	-1 cytosol
DHPT[e]	7,8-dihydropteroic acid	C14H13N6O3	-1 extracellular
PPBG[c]	porphobilinogen	C10H13N2O4	-1 cytosol
DQT[c]	3-dehydroquinic acid	C7H9O6	-1 cytosol
MPYR[c]	3-mercaptopyruvic acid	C3H3O3S	-1 cytosol
MPYR[e]	3-mercaptopyruvic acid	C3H3O3S	-1 extracellular
AKP[c]	2-dehydropantoate	C6H9O4	-1 cytosol
ASER[c]	O-acetyl-L-serine	C5H9NO4	0 cytosol
2PPG[c]	2-phosphoglycolic acid	C2H2O6P	-3 cytosol
2PPG[e]	2-phosphoglycolic acid	C2H2O6P	-3 extracellular
3PSER[c]	O-phospho-L-serine	C3H6NO6P	-2 cytosol
UREACAR[c]	urea-1-carboxylic acid	C2H3N2O3	-1 cytosol
HMTB[c]	preuroporphyrinogen	C40H38N4O17	-8 cytosol
FRGT[c]	S-formylglutathione	C11H16N3O7S	-1 cytosol
DANNA[c]	7,8-Diaminononanoate	C9H21N2O2	1 cytosol
GULAC[c]	L-gulono-1,4-lactone	C6H10O6	0 cytosol
CMS[c]	N-carbamoylsarcosine	C4H7N2O3	-1 cytosol
CMS[e]	N-carbamoylsarcosine	C4H7N2O3	-1 extracellular
NFORGLU[c]	N-formyl-L-glutamic acid	C6H7NO5	-2 cytosol
UDPNAM[c]	UDP-N-acetylmuramic acid	C20H28N3O19P2	-3 cytosol
UPGIII[c]	uroporphyrinogen III	C40H36N4O16	-8 cytosol
5DGLCNT[c]	5-Dehydro-D-gluconate	C6H9O7	-1 cytosol
PMCOA[c]	Pimeloyl-CoA	C28H41N7O19P3S	-5 cytosol
OAHSER[c]	O-acetyl-L-homoserine	C6H11NO4	0 cytosol
OAHSER[e]	O-acetyl-L-homoserine	C6H11NO4	0 extracellular
PPGLX[c]	protoporphyrinogen	C34H38N4O4	-2 cytosol
THMP[c]	thiamine(1+) monophosphate	C12H16N4O4PS	-1 cytosol
TRE[c]	alpha,alpha-trehalose	C12H22O11	0 cytosol
TRE[e]	alpha,alpha-trehalose	C12H22O11	0 extracellular
HDBUT[c]	(R)-3-Hydroxybutanoate	C4H7O3	-1 cytosol
HDBUT[e]	(R)-3-Hydroxybutanoate(e)	C4H7O3	-1 extracellular
AONA[e]	8-Amino-7-oxononanoate	C9H17NO3	0 extracellular
AONA[c]	8-Amino-7-oxononanoate	C9H17NO3	0 cytosol
F1P[c]	D-Fructose 1-phosphate	C6H11O9P	-2 cytosol
F1P[e]	D-Fructose 1-phosphate	C6H11O9P	-2 extracellular
T6P[c]	D-Tagatose 6-phosphate	C6H11O9P	-2 cytosol
HISOLP[c]	L-histidinol phosphate	C6H11N3O4P	-1 cytosol
LRL5P[c]	L-ribulose 5-phosphate	C5H9O8P	-2 cytosol
PHSER[c]	O-phospho-L-homoserine	C4H8NO6P	-2 cytosol
PHSER[e]	O-phospho-L-homoserine	C4H8NO6P	-2 extracellular
OMP[c]	orotidine 5'-(dihydrogen phosphate)	C10H10N2O11P	-3 cytosol
OMP[e]	Orotidine 5'-phosphate	C10H10N2O11P	-3 extracellular
A5P[c]	D-arabinose 5-phosphate	C5H9O8P	-2 cytosol
A5P[e]	D-arabinose 5-phosphate	C5H9O8P	-2 extracellular
GALAC[c]	L-Galactono-1,4-lactone	C6H10O6	0 cytosol
OSLHSER[c]	O-succinyl-L-homoserine	C8H12NO6	-1 cytosol
HYOXGLU[c]	4-Hydroxy-2-oxoglutarate	C5H4O6	-2 cytosol
RHAMNP[c]	L-rhamnulose 1-phosphate	C6H11O8P	-2 cytosol

ACGALA[e]	N-Acetyl-D-galactosamine(e)	C8H15NO6	0 extracellular
4PPNTE[c]	pantetheine 4'-phosphate	C11H21N2O7PS	-2 cytosol
4PPNTE[e]	pantetheine 4'-phosphate	C11H21N2O7PS	-2 extracellular
DSAM[c]	S-Adenosylmethioninamine	C14H24N6O3S	2 cytosol
bLYS[c]	(3S)-3,6-diaminohexanoic acid	C6H15N2O2	1 cytosol
bLYS[e]	(3S)-3,6-diaminohexanoic acid	C6H15N2O2	1 extracellular
3HBCOA[c]	(S)-3-Hydroxybutanoyl-CoA	C25H38N7O18P3S	-4 cytosol
HOPP[c]	2-hydroxy-3-oxopropanoic acid	C3H3O4	-1 cytosol
HOPP[e]	2-hydroxy-3-oxopropanoic acid	C3H3O4	-1 extracellular
HPRO[c]	trans-4-hydroxy-L-proline	C5H9NO3	0 cytosol
3CMUCON[c]	3-carboxy-cis,cis-muconic acid	C7H3O6	-3 cytosol
GLUGSAL[c]	L-glutamic 5-semialdehyde	C5H9NO3	0 cytosol
PURI5P[c]	pseudouridine 5'-phosphate	C9H12N2O9P	-1 cytosol
UACMAM[c]	UDP-N-acetyl-D-mannosamine	C17H25N3O17P2	-2 cytosol
bDG6P[c]	beta-D-glucose 6-phosphate	C6H11O9P	-2 cytosol
MI1P[c]	1D-myo-inositol 1-phosphate	C6H11O9P	-2 cytosol
MI1P[e]	1D-myo-inositol 1-phosphate	C6H11O9P	-2 extracellular
4HPP[c]	3-(4-hydroxyphenyl)pyruvate	C9H7O4	-1 cytosol
METOBU[c]	4-Methylthio-2-oxobutanoic acid	C5H7O3S	-1 cytosol
NAMN[c]	nicotinic acid D-ribonucleotide	C11H12NO9P	-2 cytosol
KDO[c]	keto-3-deoxy-D-manno-octulosonic acid	C8H13O8	-1 cytosol
HYISORATE[c]	3-Hydroxy-2-methylpropanoate	C4H7O3	-1 cytosol
C181ACP[c]	Oleoyl-[acyl-carrier protein]	C29H53N2O8PRS	-1 cytosol
C181ACP[e]	Oleoyl-[acyl-carrier protein]	C29H53N2O8PRS	-1 extracellular
MALACP[c]	carboxyacetyl-[acyl-carrier protein]	C14H22N2O10PRS	-2 cytosol
UDPNAMA[c]	UDP-N-acetylmuramoyl-L-alanine	C23H33N4O20P2	-3 cytosol
RMMCOA[c]	(R)-Methylmalonyl-CoA	C25H35N7O19P3S	-5 cytosol
GDPDDMAN[c]	GDP-4-dehydro-6-deoxy-alpha-D-mannose	C16H21N5O15P2	-2 cytosol
ppGpp[c]	guanosine 3',5'-bis(diphosphate)	C10H12N5O17P4	-5 cytosol
GLYCEROPE[c]	sn-glycero-3-phosphoethanolamine	C5H14NO6P	0 cytosol
GLYCEROPE[e]	sn-glycero-3-phosphoethanolamine	C5H14NO6P	0 extracellular
GALOL[c]	alpha-D-galactosyl-(1->3)-1D-myo-inositol	C12H22O11	0 cytosol
D6PGL[c]	6-O-phosphono-D-glucono-1,5-lactone	C6H9O9P	-2 cytosol
PSMEE[c]	Phosphatidyl-N-methylethanolamine	C3644H7288N100O800P100	0 cytosol
SAP[c]	S(8)-aminomethyldihydrolipoylprotein	C9H19N2OS2R	0 cytosol
NAGLUS[c]	2-acetamido-5-oxopentanoate	C7H10NO4	-1 cytosol
IMACP[c]	3-(imidazol-4-yl)-2-oxopropyl dihydrogen phosphate	C6H7N2O5P	-2 cytosol
A6RP5P[c]	5-amino-6-(5-phospho-D-ribosylamino)uracil	C9H13N4O9P	-2 cytosol
3PSME[c]	5-O-(1-carboxyvinyl)-3-phosphoshikimic acid	C10H9O10P	-4 cytosol
2C25DHO[c]	2-(carboxymethyl)-5-oxo-2,5-dihydro-2-furoic acid	C7H4O6	-2 cytosol
AHM[c]	4-Amino-5-hydroxymethyl-2-methylpyrimidine	C6H9N3O	0 cytosol
AHM[e]	4-Amino-5-hydroxymethyl-2-methylpyrimidine	C6H9N3O	0 extracellular
AHHMP[c]	2-Amino-4-hydroxy-6-hydroxymethyl-7,8-dihydropteridi	C7H9N5O2	0 cytosol
CPAD5P[c]	1-(2-carboxyphenylamino)-1-deoxy-D-ribose 5-phosph	C12H13NO9P	-3 cytosol
D6RP5P[c]	2,5-diamino-4-hydroxy-6-(5-phosphoribosylamino)pyrim	C9H14N5O8P	-2 cytosol
HCN[c]	hydrogen cyanide	CHN	0 cytosol
HCN[e]	hydrogen cyanide	CHN	0 extracellular
NA[c]	Sodium	Na	1 cytosol
NA[e]	Sodium(e)	Na	1 extracellular
DIDP[c]	2'-deoxyinosine-5'-diphosphate	C10H11N4O10P2	-3 cytosol
DITP[c]	2'-deoxyinosine-5'-triphosphate	C10H11N4O13P3	-4 cytosol
DITP[e]	2'-deoxyinosine-5'-triphosphate	C10H11N4O13P3	-4 extracellular
DUDP[c]	dUDP	C9H11N2O11P2	-3 cytosol
FADH2[c]	FADH2	C27H33N9O15P2	-2 cytosol
PQQH2[c]	pyrroloquinoline quinol	C14H5N2O8	-3 cytosol
PQQH2[e]	pyrroloquinoline quinol	C14H5N2O8	-3 extracellular
3AMP[c]	3'-AMP	C10H12N5O7P	-2 cytosol
3UMP[c]	3'-UMP	C9H11N2O9P	-2 cytosol
BUAL[c]	Butanal	C4H8O	0 cytosol
CD2[c]	Cd2+ Cadmium	Cd2	2 cytosol
CD2[e]	Cd2+ Cadmium	Cd2	2 extracellular
CGLY[c]	L-cysteinylglycine	C5H10N2O3S	0 cytosol
CGLY[e]	Gly-Cys(e)	C5H10N2O3S	0 extracellular

SALI[e]	Salicin(e)	C13H18O7	0 extracellular
IDTOL[c]	L-iditol	C6H14O6	0 cytosol
IDTOL[e]	L-iditol	C6H14O6	0 extracellular
SELD[c]	seline	HSe	-1 cytosol
BENZGLY[c]	N-benzoylglycinate	C9H8NO3	-1 cytosol
STAC[c]	Stachyose	C24H42O21	0 cytosol
ATRNA[c]	tRNA(Ala)	R	0 cytosol
ATRNA[e]	tRNA(Ala)	R	0 extracellular
RTRNA[c]	tRNA(Arg)	R	0 cytosol
RTRNA[e]	tRNA(Arg)	R	0 extracellular
DTRNA[c]	tRNA(Asp)	R	0 cytosol
DTRNA[e]	tRNA(Asp)	R	0 extracellular
CTRNA[c]	tRNA(Cys)	R	0 cytosol
CTRNA[e]	tRNA(Cys)	R	0 extracellular
ETRNA[c]	tRNA(Glu)	R	0 cytosol
ETRNA[e]	tRNA(Glu)	R	0 extracellular
GTRNA[c]	tRNA(Gly)	R	0 cytosol
GTRNA[e]	tRNA(Gly)	R	0 extracellular
HTRNA[c]	tRNA(His)	R	0 cytosol
HTRNA[e]	tRNA(His)	R	0 extracellular
ITRNA[c]	tRNA(Ile)	R	0 cytosol
ITRNA[e]	tRNA(Ile)	R	0 extracellular
LTRNA[c]	tRNA(Leu)	R	0 cytosol
LTRNA[e]	tRNA(Leu)	R	0 extracellular
KTRNA[c]	tRNA(Lys)	R	0 cytosol
KTRNA[e]	tRNA(Lys)	R	0 extracellular
MTRNA[c]	tRNA(Met)	R	0 cytosol
MTRNA[e]	tRNA(Met)	R	0 extracellular
FTRNA[c]	tRNA(Phe)	R	0 cytosol
FTRNA[e]	tRNA(Phe)	R	0 extracellular
PTRNA[c]	tRNA(Pro)	RH	0 cytosol
PTRNA[e]	tRNA(Pro)	RH	0 extracellular
STRNA[c]	tRNA(Ser)	R	0 cytosol
STRNA[e]	tRNA(Ser)	R	0 extracellular
TTRNA[c]	tRNA(Thr)	R	0 cytosol
TTRNA[e]	tRNA(Thr)	R	0 extracellular
YTRNA[c]	tRNA(Trp)	R	0 cytosol
YTRNA[e]	tRNA(Trp)	R	0 extracellular
VTRNA[c]	tRNA(Val)	R	0 cytosol
VTRNA[e]	tRNA(Val)	R	0 extracellular
CHIB[c]	N,N'-diacetylchitobiose	C16H28N2O11	0 cytosol
CHIB[e]	N,N'-diacetylchitobiose	C16H28N2O11	0 extracellular
TCYNT[c]	thiocyanic acid	CNS	-1 cytosol
TCYNT[e]	thiocyanic acid	CNS	-1 extracellular
XTSINE[c]	xanthosine	C10H12N4O6	0 cytosol
DRIB[c]	2-deoxy-D-ribose	C5H10O4	0 cytosol
DRIB[e]	2-deoxy-D-ribose	C5H10O4	0 extracellular
C120COA[c]	Lauroyl-CoA	C33H54N7O17P3S	-4 cytosol
FMNH2[c]	FMNH2	C17H21N4O9P	-2 cytosol
SOPRO[c]	5-oxo-L-prolinate	C5H6NO3	-1 cytosol
SOPRO[e]	5-oxo-L-prolinate	C5H6NO3	-1 extracellular
DTB[c]	Dethiobiotin	C10H17N2O3	-1 cytosol
HISTIDINAL[c]	L-Histidinal	C6H10N3O	1 cytosol
LLTRNA[c]	L-Lysyl-tRNA	C6H14N2OR	2 cytosol
C80COA[c]	Octanoyl-CoA	C29H46N7O17P3S	-4 cytosol
CODSUL[c]	CoA-disulfide	C42H62N14O32P6S2	-8 cytosol
LLEUTRNA[c]	L-Leucyl-tRNA	C6H12NOR	1 cytosol
LIPOYLPROTEIN[c]	lipoylprotein	C8H14NOS2R	0 cytosol
PQ[c]	phyloquinone	C31H46O2	0 cytosol
PQ[e]	phyloquinone	C31H46O2	0 extracellular
UR[c]	Ureidoglycine	C3H7N3O3	0 cytosol
ACMALT[c]	Acetyl-maltose	C14H24O12	0 cytosol
ALTRNA[c]	Arg-tRNA(Arg)	C6H14N4OR	2 cytosol

ALTRNA[e]	Arg-tRNA(Arg)	C6H14N4OR	2 extracellular
MAPYR[c]	maleylpyruvate	C7H4O6	-2 cytosol
MMALN[c]	Methylmalonate	C4H4O4	-2 cytosol
PPRIX[c]	protoporphyrin	C34H32N4O4	-2 cytosol
AMACR[c]	2-Aminoacrylate	C3H5NO2	0 cytosol
2MCIT[c]	(2R,3S)-2-methylcitrate(3-)	C7H7O7	-3 cytosol
2MCIT[e]	(2R,3S)-2-methylcitrate(3-)	C7H7O7	-3 extracellular
MEMA[c]	2-Methylmaleate	C5H4O4	-2 cytosol
3OACOA[c]	3-oxoadipyl-CoA	C27H37N7O20P3S	-5 cytosol
3OAPCOA[c]	3-oxoadipyl-CoA	C27H37N7O20P3S	-5 cytosol
GA[c]	D-Galactosamine(c)	C6H14NO5	1 cytosol
GA[e]	D-Galactosamine(e)	C6H14NO5	1 extracellular
DPHE[c]	D-phenylalanine	C9H11NO2	0 cytosol
DPHE[e]	D-phenylalanine	C9H11NO2	0 extracellular
SALAL[c]	Salicyl alcohol	C7H8O2	0 cytosol
bFRU[c]	beta-D-fructofuranose	C6H12O6	0 cytosol
bFRU[e]	beta-D-fructofuranose	C6H12O6	0 extracellular
RALIN[c]	(R)(-)-Allantoin	C4H5N4O3	-1 cytosol
ALLOIN[c]	Allantoin	C4H5N4O3	-1 cytosol
ALLOIN[e]	Allantoin(e)	C4H5N4O3	-1 extracellular
23CAMP[c]	2',3'-cyclic AMP	C10H11N5O6P	-1 cytosol
23CAMP[e]	2',3'-cyclic AMP	C10H11N5O6P	-1 extracellular
23CCMP[c]	2',3'-cyclic CMP	C9H11N3O7P	-1 cytosol
23CCMP[e]	2',3'-cyclic CMP	C9H11N3O7P	-1 extracellular
23CUMP[c]	2',4'-cyclic UMP	C9H10N2O8P	-1 cytosol
23CUMP[e]	2',4'-cyclic UMP	C9H10N2O8P	-1 extracellular
HEAL[c]	hexanal	C6H12O	0 cytosol
5MC[c]	5-methylcytosine	C5H8N3O	1 cytosol
5MC[e]	5-methylcytosine	C5H8N3O	1 extracellular
GLYTRNA[c]	Gly-tRNA(Gly)	C2H4NOR	1 cytosol
LMETTRNA[c]	L-Methionyl-tRNA	C5H10NOSR	1 cytosol
LMETTRNA[e]	L-Methionyl-tRNA	C5H10NOSR	1 extracellular
METTRNA[c]	Met-tRNA(Met)	C5H10NOSR	1 cytosol
PRE2[c]	Precorrin 2	C42H41N4O16	-7 cytosol
MUCO[c]	cis,cis-Muconate	C6H4O4	-2 cytosol
IPPMAL[c]	(2S)-2-isopropylmalate(2-)	C7H10O5	-2 cytosol
PAD[c]	2-phenylacetamide	C8H9NO	0 cytosol
CYAL[c]	L-3-cyanoalanine	C4H6N2O2	0 cytosol
FPYR[c]	3-fumarylpyruvate	C7H4O6	-2 cytosol
BUTP[c]	Butanoylphosphate	C4H7O5P	-2 cytosol
LSERTRNA[c]	Ser-tRNA(Ser)	C3H6NO2R	1 cytosol
LVALTRNA[c]	L-Valyl-tRNA(Val)	C5H10NOR	1 cytosol
METHYLHYDANTOIN[c]	N-methylhydantoin	C4H6N2O2	0 cytosol
R2MMAL[c]	(R)-2-Methylmalate	C5H6O5	-2 cytosol
PPMAL[c]	2-Isopropylmaleate	C7H8O4	-2 cytosol
DHSK[c]	3-dehydroshikimate	C7H7O5	-1 cytosol
CAALA[c]	N-carbamoyl-beta-alanine	C4H7N2O3	-1 cytosol
ADGLC[c]	6-O-acetyl-beta-D-glucose	C8H14O7	0 cytosol
GLUAC[c]	D-Glucuronolactone	C6H8O6	0 cytosol
FKYN[c]	L-Formylkynurenine	C11H12N2O4	0 cytosol
LPROTRNA[c]	Pro-tRNA(Pro)	RC5H8NO	1 cytosol
ACMUM[e]	N-Acetylmuramate(e)	C11H18NO8	-1 extracellular
ASPRM[c]	N-Acetylspemidine	C9H23N3O	2 cytosol
SUCBEN[c]	2-Succinylbenzoate	C11H8O5	-2 cytosol
PS[c]	3-sn-phosphatidyl-L-serine	C38.7H72.8NO10P	-1 cytosol
PRBATP[c]	1-(5-phospho-D-ribosyl)-ATP	C15H19N5O20P4	-6 cytosol
PRBAMP[c]	1-(5-phosphoribosyl)-5'-AMP	C15H19N5O14P2	-4 cytosol
LYRTRNA[c]	Tyr-tRNA(Tyr)	RC9H10NO2	1 cytosol
PPAP[c]	Propanoyl phosphate	C3H5O5P	-2 cytosol
MBUTCOA[c]	3-Methylbutanoyl-CoA	C26H40N7O17P3S	-4 cytosol
DIHYDROLIPOYLPROTEIN[c]	dihydrolipoylprotein	C8H16NOS2R	0 cytosol
ASPTRNA[c]	Asp-tRNA(Asp)	C4H5NO3R	0 cytosol
LGLUTRNA[c]	L-Glutamyl-tRNA(Glu)	C5H7NO3R	0 cytosol

HHTRNA[c]	His-tRNA(His)	C6H8N3OR	1 cytosol
METOX[c]	L-methionine S-oxide	C5H11NO3S	0 cytosol
METOX[e]	L-methionine S-oxide	C5H11NO3S	0 extracellular
LTHETRNA[c]	Thr-tRNA(Thr)	C4H8NO2R	1 cytosol
THTP[c]	Thiamin triphosphate	C12H16N4O10P3S	-3 cytosol
BDOH[c]	(R,R)-2,3-Butanediol	C4H10O2	0 cytosol
BDOH[e]	(R,R)-2,3-Butanediol	C4H10O2	0 extracellular
MECRCO[c]	3-Methylcrotonyl-CoA	C26H38N7O17P3S	-4 cytosol
BASP[c]	4-phospho-L-aspartate	C4H6NO7P	-2 cytosol
MTR[c]	5-Methylthio-D-ribose	C6H12O4S	0 cytosol
MTR[e]	5-Methylthio-D-ribose	C6H12O4S	0 extracellular
PRAM[c]	5-phospho-beta-D-ribosylamine	C5H11NO7P	-1 cytosol
DIMBEN[c]	Dimethylbenzimidazole	C9H10N2	0 cytosol
LCYSTRNA[c]	L-Cysteinyl-tRNA(Cys)	C3H6NOSR	1 cytosol
LPROTRNA[c]	L-Isoleucyl-tRNA(Pro)	R	1 cytosol
LILEUTRNA[c]	L-Isoleucyl-tRNA(Ile)	C6H12NOR	1 cytosol
NAMD[c]	N-ribosylnicotinamide	C11H15N2O5	1 cytosol
SUCBENCO[c]	2-Succinylbenzoyl-CoA	C32H39N7O20P3S	-5 cytosol
SME3P[c]	3-phosphoshikimic acid	C7H8O8P	-3 cytosol
RAMOL[c]	(R)-1-aminopropan-2-ol	C3H10NO	1 cytosol
TRADOCO[c]	2-trans-Dodecenoyl-CoA	C33H52N7O17P3S	-4 cytosol
PHP[c]	3-phosphonooxypyruvic acid	C3H2O7P	-3 cytosol
CPGIII[c]	coproporphyrinogen III	C36H40N4O8	-4 cytosol
G3PG[c]	glycerophosphoglycerol	C6H14O8P	-1 cytosol
DIAMIBU[c]	L-2,4-Diaminobutanoate	C4H11N2O2	1 cytosol
AIBUT[c]	(S)-3-aminoisobutyrate	C4H8NO2	0 cytosol
AIBUT[e]	(S)-3-aminoisobutyrate	C4H8NO2	0 extracellular
GLU5P[c]	L-gamma-glutamyl phosphate	C5H8NO7P	-2 cytosol
FOFMET[c]	fMet-tRNA(fMet)	C6H9NO2SR	0 cytosol
DTDADM[c]	dTDP-6-deoxy-beta-L-mannose	C16H24N2O15P2	-2 cytosol
DHDP[c]	(S)-2,3-dihydrodipicolinic acid	C7H5NO4	-2 cytosol
MCECOA[c]	2-Methylacetoacetyl-CoA	C26H38N7O18P3S	-4 cytosol
MCRCOA[c]	2-Methylbut-2-enoyl-CoA	C26H38N7O17P3S	-4 cytosol
AIR[c]	5-amino-1-(5-phospho-D-ribosyl)imidazole	C8H13N3O7P	-1 cytosol
DEZ[c]	4-phospho-D-erythronic acid	C4H6O8P	-3 cytosol
ARGSUCC[c]	(N(omega)-L-arginino)succinic acid	C10H17N4O6	-1 cytosol
PREQ2P[c]	Presqualene diphosphate	C30H49O7P2	-3 cytosol
4HDPRO[c]	cis-4-hydroxy-D-proline	C5H9NO3	0 cytosol
4HDPRO[e]	cis-4-hydroxy-D-proline	C5H9NO3	0 extracellular
LGT[c]	(R)-S-lactoylglutathione	C13H20N3O8S	-1 cytosol
OXGLY[c]	Oxaloglycolate	C4H2O6	-2 cytosol
5FTHF[c]	5-formyltetrahydrofolic acid	C20H21N7O7	-2 cytosol
5FTHF[e]	5-formyltetrahydrofolic acid	C20H21N7O7	-2 extracellular
4PPNTO[c]	(R)-4'-phosphopantothenic acid	C9H15NO8P	-3 cytosol
IGP[c]	1-C-(indol-3-yl)glycerol 3-phosphate	C11H12NO6P	-2 cytosol
AM3OXBUC[c]	L-2-Amino-3-oxobutanoic acid	C4H7NO3	0 cytosol
LPHETRNA[c]	L-Phenylalanyl-tRNA(Phe)	C9H10NOR	1 cytosol
TRPTRNA[c]	Trp-tRNA(Trp)	C11H11N2OR	1 cytosol
RHCYS[c]	S-Ribosyl-L-homocysteine	C9H17NO6S	0 cytosol
THFGLU[c]	Tetrahydrofolyl-[Glu](2)	C24H30N8O9	0 cytosol
THFGLU[e]	Tetrahydrofolyl-[Glu](2)	C24H30N8O9	0 extracellular
THFGLU3[c]	Tetrahydrofolyl-[Glu](3)	C29H37N9O12	0 cytosol
MI4P[c]	1D-myo-inositol 4-phosphate	C6H11O9P	-2 cytosol
MI4P[e]	1D-myo-inositol 4-phosphate	C6H11O9P	-2 extracellular
RHYBC[c]	(R)-3-Hydroxybutanoyl-CoA	C25H38N7O18P3S	-4 cytosol
SODHF2A[c]	5-oxo-4,5-dihydro-2-furylactic acid	C6H5O4	-1 cytosol
TMASP[c]	threo-3-methyl-L-aspartate	C5H7NO4	-2 cytosol
DHN[c]	1,4-dihydroxy-2-naphthoic acid	C11H7O4	-1 cytosol
DHN[e]	1,4-dihydroxy-2-naphthoic acid	C11H7O4	-1 extracellular
IMIPR[c]	4-Imidazolone-5-propanoate	C6H6N2O3	-2 cytosol
PYRTETR[c]	6-Pyruvoyltetrahydropterin	C9H11N5O3	0 cytosol
APOACP[c]	apo-[acyl-carrier protein]	R	0 cytosol
APOACP[e]	apo-[acyl-carrier protein]	R	0 extracellular

PYR2CAR[c]	Pyridine-2,3-dicarboxylate	C7H3NO4	-2 cytosol
UDPAGAL[c]	UDP-D-galactofuranose	C15H22N2O17P2	-2 cytosol
GLUP[c]	alpha-D-Glutamyl phosphate	C5H8NO7P	-2 cytosol
GLUP[e]	alpha-D-Glutamyl phosphate	C5H8NO7P	-2 extracellular
AR5P[c]	alpha-D-ribose 5-phosphate	C5H9O8P	-2 cytosol
AR5P[e]	alpha-D-ribose 5-phosphate	C5H9O8P	-2 extracellular
S4AMOXOPE[c]	(S)-4-Amino-5-oxopentanoate	C5H9NO3	0 cytosol
DPM[c]	dopamine	C8H12NO2	1 cytosol
DPM[e]	dopamine	C8H12NO2	1 extracellular
TAGBP[c]	D-Tagatose 1,6-bisphosphate	C6H10O12P2	-4 cytosol
ASUC[c]	N(6)-(1,2-dicarboxyethyl)-AMP	C14H14N5O11P	-4 cytosol
GAR[c]	N(1)-(5-phospho-D-ribosyl)glycinamide	C7H14N2O8P	-1 cytosol
PGP[c]	3-(3-sn-phosphatidyl)-sn-glycerol 1-phosphate	C38.7H72.8O13P2	-3 cytosol
P5C[c]	(S)-1-pyrroline-5-carboxylic acid	C5H6NO2	-1 cytosol
ACACP[c]	acetyl-[acyl-carrier protein]	C13H23O8N2PRS	-1 cytosol
ACACP[e]	acetyl-[acyl-carrier protein]	C13H23O8N2PRS	-1 extracellular
TDHDP[c]	(S)-2,3,4,5-tetrahydrodipicolinic acid	C7H7NO4	-2 cytosol
MI3P[c]	1D-myo-inositol 3-phosphate	C6H11O9P	-2 cytosol
MI3P[e]	1D-myo-inositol 3-phosphate	C6H11O9P	-2 extracellular
DH3MVA[c]	2,3-dihydroxy-3-methylbutanoic acid	C5H9O4	-1 cytosol
AICAD[c]	5-Amino-4-imidazolecarboxamide	C4H6N4O	0 cytosol
AICAD[e]	5-Amino-4-imidazolecarboxamide	C4H6N4O	0 extracellular
PTCYS[c]	N-[(R)-pantothenoyl]-L-cysteine	C12H21N2O6S	-1 cytosol
PTCYS[e]	N-[(R)-pantothenoyl]-L-cysteine	C12H21N2O6S	-1 extracellular
C180ACP[c]	Stearoyl-[acyl-carrier protein]	C29H55N2O8PRS	-1 cytosol
DHMP[c]	(2R,3R)-2,3-dihydroxy-3-methylpentanoate	C6H11O4	-1 cytosol
DHFUAC[c]	5-oxo-2,5-dihydro-2-furylacetate	C6H5O4	-1 cytosol
CMPKDO[c]	CMP-3-deoxy-D-manno-octulosonic acid	C17H24N3O15P	-2 cytosol
AMIP[c]	D-1-Aminopropan-2-ol O-phosphate	C3H9NO4P	-1 cytosol
NAGLUP[c]	N-acetyl-L-gamma-glutamyl phosphate	C7H9NO8P	-3 cytosol
THPTGLU[c]	tetrahydropteroyltri-L-glutamic acid	C29H37N9O12	0 cytosol
THPTGLU[e]	tetrahydropteroyltri-L-glutamic acid	C29H37N9O12	0 extracellular
OPP[c]	all-trans-octaprenyl diphosphate	C40H65O7P2	-3 cytosol
OPP[e]	all-trans-octaprenyl diphosphate	C40H65O7P2	-3 extracellular
DIHB[c]	(2S,3S)-2,3-Dihydro-2,3-dihydroxybenzoate	C7H7O4	-1 cytosol
33HMEOXOBUT[c]	3-hydroxy-3-methyl-2-oxobutanoate	C5H7O4	-1 cytosol
MTR1P[c]	S-Methyl-5-thio-D-ribose 1-phosphate	C6H11O7PS	-2 cytosol
ATHEDI[c]	all-trans-Heptaprenyl diphosphate	C35H57O7P2	-3 cytosol
2MACO[c]	(Z)-but-2-ene-1,2,3-tricarboxylic acid	C7H5O6	-3 cytosol
2MACO[e]	(Z)-but-2-ene-1,2,3-tricarboxylic acid	C7H5O6	-3 extracellular
OICAP[c]	(2S)-2-isopropyl-3-oxosuccinic acid	C7H8O5	-2 cytosol
OICAP[e]	(2S)-2-isopropyl-3-oxosuccinic acid	C7H8O5	-2 extracellular
C4DACP[c]	But-2-enoyl-[acyl-carrier protein]	C15H25N2O8PRS	-1 cytosol
NAMA6P[c]	N-acetyl-D-mannosamine 6-phosphate	C8H14NO9P	-2 cytosol
NAMA6P[e]	N-acetyl-D-mannosamine 6-phosphate	C8H14NO9P	-2 extracellular
DHMTVA[c]	(R)-2,3-Dihydroxy-3-methylbutanoate	C5H9O4	-1 cytosol
PHC[c]	(3R,5S)-1-pyrroline-3-hydroxy-5-carboxylic acid	C5H6NO3	-1 cytosol
TCHDIONE[c]	3,5/4-trihydroxycyclohexane-1,2-dione	C6H8O5	0 cytosol
TCHDIONE[e]	3,5/4-trihydroxycyclohexane-1,2-dione	C6H8O5	0 extracellular
THZ[c]	5-(2-Hydroxyethyl)-4-methylthiazole	C6H9NOS	0 cytosol
NPRAN[c]	N-(5-phospho-beta-D-ribosyl)anthranilic acid	C12H13NO9P	-3 cytosol
PSNDM[c]	Phosphatidyl-N-dimethylethanolamine	C3744H7388N100O800P100	-100 cytosol
DIPYRCAR[c]	3,4-Dihydro-2H-Pyrrole-2-carboxylate	C5H6NO2	-1 cytosol
THZP[c]	4-methyl-5-(2-phosphonooxyethyl)thiazole	C6H8NO4PS	-2 cytosol
THZP[e]	4-methyl-5-(2-phosphonooxyethyl)thiazole	C6H8NO4PS	-2 extracellular
D8RL[c]	6,7-dimethyl-8-(1-D-ribityl)lumazine	C13H17N4O6	-1 cytosol
4PPNCYS[c]	N-[(R)-4-phosphopantothenoyl]-L-cysteine	C12H20N2O9PS	-3 cytosol
4HPACALO[c]	(Z)-(4-hydroxyphenyl)acetaldehyde oxime	C8H9NO2	0 cytosol
4HPACALO[e]	(Z)-(4-hydroxyphenyl)acetaldehyde oxime	C8H9NO2	0 extracellular
FGAR[c]	N(2)-formyl-N(1)-(5-phospho-D-ribosyl)glycinamide	C8H13N2O9P	-2 cytosol
AL26DA[c]	N6-Acetyl-LL-2,6-diaminoheptanedioate	C9H15N2O5	-1 cytosol
HMBUTCOA[c]	(2S,3S)-3-Hydroxy-2-methylbutanoyl-CoA	C26H40N7O18P3S	-4 cytosol
CBHCAP[c]	(2R,3S)-3-isopropylmalate(2-)	C7H10O5	-2 cytosol

CBCCP[c]	Carboxybiotin-carboxyl-carrier protein	C18H26N5O6SR2	0 cytosol
SDAPIM[c]	N-succinyl-L-2,6-diaminopimelic acid	C11H16N2O7	-2 cytosol
AMOB[c]	S-Adenosyl-4-methylthio-2-oxobutanoate	C15H19N5O6S	0 cytosol
KDPG[c]	2-dehydro-3-deoxy-6-phospho-D-gluconic acid	C6H8O9P	-3 cytosol
A6RP5P2[c]	5-amino-6-(5-phospho-D-ribitylamino)uracil	C9H15N4O9P	-2 cytosol
KDOB[c]	8-phospho-3-deoxy-D-manno-oct-2-ulosonic acid	C8H12O11P	-3 cytosol
MTHPTGLU[c]	5-methyltetrahydropteroyltri-L-glutamic acid	C30H39N9O12	0 cytosol
MTHPTGLU[e]	5-methyltetrahydropteroyltri-L-glutamic acid	C30H39N9O12	0 extracellular
pppGpp[c]	guanosine 3'-diphosphate 5'-triphosphate	C10H12N5O20P5	-6 cytosol
NAGA1P[c]	N-acetyl-alpha-D-glucosamine 1-phosphate	C8H14NO9P	-2 cytosol
AHMP[c]	4-Amino-2-methyl-5-phosphomethylpyrimidine	C6H8N3O4P	-2 cytosol
UDCPDP[c]	undecaprenyl diphosphate	C55H89O7P2	-3 cytosol
UDCPDP[e]	undecaprenyl diphosphate	C55H89O7P2	-3 extracellular
MTRL1P[c]	S-Methyl-5-thio-D-ribose 1-phosphate	C6H11O7PS	-2 cytosol
2MICIT[c]	(2S,3R)-3-hydroxybutane-1,2,3-tricarboxylic acid	C7H7O7	-3 cytosol
2MICIT[e]	(2S,3R)-3-hydroxybutane-1,2,3-tricarboxylic acid	C7H7O7	-3 extracellular
C4HACP[c]	(R)-3-Hydroxybutanoyl-[acyl-carrier protein]	C15H27N2O9PRS	-1 cytosol
C10HACP[c]	(R)-3-Hydroxydecanoyl-[acyl-carrier protein]	C21H39N2O9PRS	-1 cytosol
C8HACP[c]	(R)-3-Hydroxyoctanoyl-[acyl-carrier protein]	C19H35N2O9PRS	-1 cytosol
UACCG[c]	UDP-N-acetyl-3-O-(1-carboxyvinyl)-D-glucosamine	C20H26N3O19P2	-3 cytosol
C16HACP[c]	(R)-3-Hydroxypalmitoyl-[acyl-carrier protein]	C27H51N2O9PRS	-1 cytosol
FGAM[c]	2-formamido-N(1)-(5-phospho-D-ribosyl)acetamidine	C8H15N3O8P	-1 cytosol
UDPG23A[c]	UDP-2,3-bis(3-hydroxytetradecanoyl)-D-glucosamine	C43H75N3O20P2	-2 cytosol
DIMGp[c]	D-erythro-1-(Imidazol-4-yl)glycerol 3-phosphate	C6H9N2O6P	-2 cytosol
AICAR[c]	1-(5'-Phosphoribosyl)-5-amino-4-imidazolecarboxamide	C9H13N4O8P	-2 cytosol
C14HACP[c]	(R)-3-Hydroxytetradecanoyl-[acyl-carrier protein]	C25H47N2O9PRS	-1 cytosol
3DDAH7P[c]	7-phospho-2-dehydro-3-deoxy-D-arabino-heptonic acid	C7H10O10P	-3 cytosol
UGGLA[c]	UDP-N-acetylmuramoyl-L-alanyl-gamma-D-glutamyl-L-	C40H64N9O26P2	-1 cytosol
UGGLA[e]	UDP-N-acetylmuramoyl-L-alanyl-gamma-D-glutamyl-L-	C40H64N9O26P2	-1 extracellular
4R5AU[c]	5-amino-6-(D-ribitylamino)uracil	C9H16N4O6	0 cytosol
PRFICA[c]	5-formamido-1-(5-phospho-D-ribosyl)imidazole-4-carbo	C10H13N4O9P	-2 cytosol
UDPG2AA[c]	UDP-3-O-(3-hydroxytetradecanoyl)-N-acetylglucosamin	C31H51N3O19P2	-2 cytosol
CAIR[c]	5-amino-1-(5-phospho-D-ribosyl)imidazole-4-carboxylic	C9H11N3O9P	-3 cytosol
2MAHMP[c]	4-amino-2-methyl-5-diphosphonatomethylpyrimidine(3-)	C6H8N3O7P2	-3 cytosol
2MAHMP[e]	4-amino-2-methyl-5-diphosphonatomethylpyrimidine(3-)	C6H8N3O7P2	-3 extracellular
RI5P[c]	alpha-ribazole 5'-phosphate	C14H17N2O7P	-2 cytosol
AHHMD[c]	2-Amino-7,8-dihydro-4-hydroxy-6-(diphosphoxymethyl)	C7H8N5O8P2	-3 cytosol
SAICAR[c]	(2S)-2-[5-amino-1-(5-phospho-beta-D-ribosyl)imidazole	C13H15N4O12P	-4 cytosol
LIPDX[c]	lipid X	C34H64NO12P	-2 cytosol
LIPDX[e]	lipid X	C34H64NO12P	-2 extracellular
UAGGLA[c]	undecaprenyldiphospho-N-acetylmuramoyl-L-alanyl-D-g	C86H140N7O21P2	-3 cytosol
DHP[c]	7,8-Dihydroneopterin	C9H13N5O4	0 cytosol
UGMD[c]	UDP-N-acetylmuramoyl-L-alanyl-D-gamma-glutamyl-m	C35H51N7O26P2	-4 cytosol
UGMDA[c]	UDP-N-acetylmuramoyl-L-alanyl-D-glutamyl-meso-2,6-	C41H61N9O28P2	-4 cytosol
AHDT[c]	2-Amino-4-hydroxy-6-(erythro-1,2,3-trihydroxypropyl)d	C9H12N5O13P3	-4 cytosol
PRFP[c]	1-(5-phospho-D-ribosyl)-5-[(5-phospho-D-ribosylamino)	C15H21N5O15P2	-4 cytosol
PRLP[c]	5-[(5-phospho-1-deoxy-D-ribulos-1-ylimino)methylamin	C15H21N5O15P2	-4 cytosol
LIPIDA[c]	lipid Iva	C68H126N2O23P2	-4 cytosol
DISAC1P[c]	2,3,2',3'-tetrakis(3-hydroxytetradecanoyl)-alpha-D-gluco	C68H127N2O20P	-2 cytosol
3UIB[c]	3-ureidoisobutyric acid	C5H9N2O3	-1 cytosol
HYETHS[c]	2-Hydroxyethanesulfonate	C2H5O4S	-1 cytosol
HYETHS[e]	2-Hydroxyethanesulfonate(e)	C2H5O4S	-1 extracellular
2HETPP[c]	2-(1-hydroxyethyl)thiamine diphosphate	C14H20N4O8P2S	-2 cytosol
DAD5[c]	5'-deoxyadenosine	C10H13N5O3	0 cytosol
DAD5[e]	5'-deoxyadenosine	C10H13N5O3	0 extracellular
C120ACP[c]	lauroyl-[acyl-carrier protein]	C23H43N2O8PRS	-1 cytosol
HHDCOA[c]	(S)-3-Hydroxyhexadecanoyl-CoA	C37H62N7O18P3S	-4 cytosol
C160COA[c]	3-Oxopalmitoyl-CoA	C37H60N7O18P3S	-4 cytosol
HYTECOA[c]	(S)-3-Hydroxytetradecanoyl-CoA	C35H58N7O18P3S	-4 cytosol
C140COA[c]	3-Oxotetradecanoyl-CoA	C35H56N7O18P3S	-4 cytosol
HYDOCOA[c]	(S)-3-Hydroxydodecanoyl-CoA	C33H54N7O18P3S	-4 cytosol
C120COA[c]	3-Oxododecanoyl-CoA	C33H52N7O18P3S	-4 cytosol
HYDEC[c]	(S)-Hydroxydecanoyl-CoA	C31H50N7O18P3S	-4 cytosol

C10COA[c]	3-Oxodecanoyl-CoA	C31H48N7O18P3S	-4 cytosol
HYTACOA[c]	(S)-Hydroxyoctanoyl-CoA	C29H46N7O18P3S	-4 cytosol
C8COA[c]	3-Oxoctanoyl-CoA	C29H44N7O18P3S	-4 cytosol
HYHECOA[c]	(S)-Hydroxyhexanoyl-CoA	C27H42N7O18P3S	-4 cytosol
OHEXCOA[c]	3-Oxohexanoyl-CoA	C27H40N7O18P3S	-4 cytosol
C6COA[c]	Hexanoyl-CoA	C27H42N7O17P3S	-4 cytosol
C6DCOA[c]	trans-Hex-2-enoyl-CoA	C27H40N7O17P3S	-4 cytosol
C16DCOA[c]	trans-Hexadec-2-enoyl-CoA	C37H60N7O17P3S	-4 cytosol
C14DCOA[c]	trans-Tetradec-2-enoyl-CoA	C35H56N7O17P3S	-4 cytosol
C100COA[c]	Decanoyl-CoA	C31H50N7O17P3S	-4 cytosol
C10DCOA[c]	trans-Dec-2-enoyl-CoA	C31H48N7O17P3S	-4 cytosol
C8DCOA[c]	trans-Oct-2-enoyl-CoA	C29H44N7O17P3S	-4 cytosol
SEMET[c]	selenomethionine	C5H11NO2Se	0 cytosol
S7P[c]	sedoheptulose 7-phosphate	C7H13O10P	-2 cytosol
GDPOFUC[c]	GDP-4-dehydro-L-fucose	C16H21N5O15P2	-2 cytosol
LAC6P[c]	Lactose 6-phosphate	C12H21O14P	-2 cytosol
MELT[c]	Melibiotol	C12H24O11	0 cytosol
EPIBIO[c]	Epimelibiose	C12H22O11	0 cytosol
DGALGLY[c]	3-beta-D-Galactosyl-sn-glycerol	C9H18O8	0 cytosol
MELI[c]	Melibiose	C12H22O11	0 cytosol
MELI[e]	Melibiose(e)	C12H22O11	0 extracellular
MATR[c]	Mannotriose	C18H32O16	0 cytosol
PHYDP[c]	Phytol diphosphate	C20H39O7P2	-3 cytosol
DIN[c]	2'-deoxyinosine	C10H12N4O4	0 cytosol
DIN[e]	Deoxyinosine(e)	C10H12N4O4	0 extracellular
ATHR[c]	L-allothreonine	C4H9NO3	0 cytosol
ATHR[e]	L-allothreonine	C4H9NO3	0 extracellular
3SPYR[c]	3-sulfolpyruvic acid	C3H2O6S	-2 cytosol
3SPYR[e]	3-sulfolpyruvic acid	C3H2O6S	-2 extracellular
SAOPIM[c]	N-Succinyl-2-amino-6-oxopimelate	C11H12NO8	-3 cytosol
ACAMOXM[c]	N-Acetyl-L-2-amino-6-oxopimelate	C9H11NO6	-2 cytosol
34DHPEG[c]	3,4-Dihydroxyphenylethyleneglycol	C8H10O4	0 cytosol
34DHPEG[e]	3,4-Dihydroxyphenylethyleneglycol	C8H10O4	0 extracellular
34DHMA[c]	3,4-Dihydroxymandelaldehyde	C8H8O4	0 cytosol
34DHMA[e]	3,4-Dihydroxymandelaldehyde	C8H8O4	0 extracellular
CVN[c]	Cinnavalinate	C14H6N2O6	-2 cytosol
CVN[e]	Cinnavalinate	C14H6N2O6	-2 extracellular
FORL[c]	Formylanthranilate	C8H6NO3	-1 cytosol
HPCOA[c]	3-Hydroxypropionyl-CoA	C24H36N7O18P3S	-4 cytosol
AMPROTR[c]	beta-Aminopropionitrile	C3H7N2	1 cytosol
SELT[c]	selenite(2-)	SeO3	-2 cytosol
ASELNT[c]	Adenylylselenate	C10H13N5O10PSe	-1 cytosol
SCYS[c]	selenocysteine	C3H7NO2Se	0 cytosol
SCYS[e]	selenocysteine	C3H7NO2Se	0 extracellular
SELNT[c]	selenate	O4Se	-2 cytosol
SHSYS[c]	selenohomocysteine	C4H8NO2Se	-1 cytosol
SCYST[c]	L-selenocystathionine	C7H14N2O4Se	0 cytosol
MSEL[c]	Methylselenol	CH4Se	0 cytosol
GCALA[c]	gamma-Glutamyl-beta-cyanoalanine	C9H12N3O5	-1 cytosol
GSPRMD[c]	glutathionylspermidine	C17H36N6O5S	-2 cytosol
GTSRMD[c]	glutathionylspermidine	C17H36N6O5S	2 cytosol
GTSRMD[e]	glutathionylspermidine	C17H36N6O5S	2 extracellular
AACACP[c]	Acetoacetyl-[acyl-carrier protein]	C15H25N2O9PRS	-1 cytosol
C40ACP[c]	Butyryl-[acyl-carrier protein]	C15H27N2O8PRS	-1 cytosol
C6OACP[c]	3-Oxohexanoyl-[acyl-carrier protein]	C17H29N2O9PRS	-1 cytosol
C6HACP[c]	D-3-Hydroxyhexanoyl-[acyl-carrier protein]	C17H31N2O9PRS	-1 cytosol
C6DACP[c]	trans-Hex-2-enoyl-[acyl-carrier protein]	C17H29N2O8PRS	-1 cytosol
C6OACP[c]	Hexanoyl-[acyl-carrier protein]	C17H31N2O8PRS	-1 cytosol
C8OACP[c]	3-Oxoctanoyl-[acyl-carrier protein]	C19H33N2O9PRS	-1 cytosol
C8DACP[c]	2-Octenoyl-[acyl-carrier protein]	C19H33N2O8PRS	-1 cytosol
C8OACP[c]	octanoyl-[acyl-carrier protein]	C19H35N2O8PRS	-1 cytosol
C10OACP[c]	3-Oxodecanoyl-[acyl-carrier protein]	C21H37N2O9PRS	-1 cytosol
C10DACP[c]	trans-2-Decenoyl-[acyl-carrier protein]	C21H37N2O8PRS	-1 cytosol

C100ACP[c]	decanoyl-[acyl-carrier protein]	C21H39N2O8PRS	-1 cytosol
C12OACP[c]	3-Oxododecanoyl-[acyl-carrier protein]	C23H41N2O9PRS	-1 cytosol
C12HACP[c]	D-3-Hydroxydodecanoyl-[acp]	C23H43N2O9PRS	-1 cytosol
C12DACP[c]	(2E)-Dodecenoyl-[acp]	C23H41N2O8PRS	-1 cytosol
C14OACP[c]	3-Oxotetradecanoyl-[acyl-carrier protein]	C25H45N2O9PRS	-1 cytosol
C14DACP[c]	(2E)-Tetradecenoyl-[acp]	C25H45N2O8PRS	-1 cytosol
C14OACP[c]	myristoyl-[acyl-carrier protein]	C25H47N2O8PRS	-1 cytosol
C16OACP[c]	3-Oxohexadecanoyl-[acyl-carrier protein]	C27H49N2O9PRS	-1 cytosol
C16DACP[c]	(2E)-Hexadecenoyl-[acp]	C27H49N2O8PRS	-1 cytosol
C16OACP[c]	palmitoyl-[acyl-carrier protein]	C27H51N2O8PRS	-1 cytosol
UDPGI[c]	uroporphyrinogen I	C40H44N4O16	0 cytosol
CPGI[c]	coproporphyrinogen I	C36H40N4O8	-4 cytosol
CPGI[e]	coproporphyrinogen I	C36H40N4O8	-4 extracellular
PRE3A[c]	precorrin 3A	C43H43N4O16	-7 cytosol
COBY[c]	Cobyrinate	C45H52CoN4O14	-6 cytosol
CBII[c]	cobinamide	C48H72N11O8Co	-1 cytosol
RIBAZ[c]	alpha-Ribazole	C14H18N2O4	0 cytosol
VB12[c]	cob(III)alamin	C62H88CoN13O14P	1 cytosol
VB12[e]	cob(III)alamin	C62H88CoN13O14P	1 extracellular
SHCR[c]	sirohydrochlorin	C42H38N4O16	-8 cytosol
N4HBZ[c]	4-hydroxy-3-octaprenylbenzoate	C47H69O3	-1 cytosol
N4HBZ[e]	4-hydroxy-3-octaprenylbenzoate	C47H69O3	-1 extracellular
2NPPP[c]	2-octaprenylphenol	C46H70O	0 cytosol
2NPPP[e]	2-octaprenylphenol	C46H70O	0 extracellular
2N6H[c]	6-hydroxy-2-octaprenylphenol	C46H70O2	0 cytosol
2NPMP[c]	6-methoxy-2-octaprenylphenol	C47H72O2	0 cytosol
2NPMP[e]	6-methoxy-2-octaprenylphenol	C47H72O2	0 extracellular
2NPMB[c]	6-methoxy-2-octaprenyl-1,4-benzoquinone	C47H70O3	0 cytosol
2NPMB[e]	6-methoxy-2-octaprenyl-1,4-benzoquinone	C47H70O3	0 extracellular
2NPMMB[c]	3-methyl-6-methoxy-2-octaprenyl-1,4-benzoquinone	C48H72O3	0 cytosol
2OP3M5H6M14BQ[c]	5-hydroxy-6-methoxy-3-methyl-2-octaprenyl-1,4-benzoq	C48H72O4	0 cytosol
SHCHC[c]	(1R,6R)-6-Hydroxy-2-succinylcyclohexa-2,4-diene-1-car	C11H10O6	-2 cytosol
DMK[c]	2-demethylmenaquinone	C15H14O2(C5H8)n	0 cytosol
MQL8[c]	menaquinol 8	C51H74O2	0 cytosol
3CMP[c]	3'-CMP	C9H12N3O8P	-2 cytosol
MERLAC[c]	3-Mercaptolactate	C3H5O3S	-1 cytosol
SULCYS[c]	S-Sulfo-L-cysteine	C3H6NO5S2	-1 cytosol
IMASP[c]	Iminoaspartate	C4H3NO4	-2 cytosol
NAR[c]	D-ribosylnicotinic acid	C11H13NO6	0 cytosol
2HPA[c]	2-Hydroxyphenylacetate	C8H7O3	-1 cytosol
2HPA[e]	2-Hydroxyphenylacetate	C8H7O3	-1 extracellular
UAAGGLA[c]	undecaprenyldiphospho-N-acetyl-(N-acetylglucosaminy)	C94H153N8O26P2	-3 cytosol
UAAGGLA[e]	undecaprenyldiphospho-N-acetyl-(N-acetylglucosaminy)	C94H153N8O26P2	-3 extracellular
UAGMDA[c]	Undecaprenyl-diphospho-N-acetyl-muramoyl-L-alanyl-D-	C87H139N7O23P2	-4 cytosol
UAAGMDA[c]	undecaprenyldiphospho-N-acetyl-(N-acetylglucosaminy)	C95H152N8O28P2	-4 cytosol
BTAMP[c]	biotinyl-5'-AMP	C20H27N7O9PS	-1 cytosol
FPYNTP[c]	Formamidopyrimidine nucleoside triphosphate	C10H15N5O15P3	-3 cytosol
DIANTP[c]	2,5-Diaminopyrimidine nucleoside triphosphate	C9H14N5O14P3	-4 cytosol
FTHFGLU[c]	10-Formyltetrahydrofolyl L-glutamate	C25H27N8O10	-3 cytosol
4HGLUSA[c]	L-4-hydroxyglutamic semialdehyde	C5H9NO4	0 cytosol
HYDROXYAKG[c]	D-4-Hydroxy-2-oxoglutarate	C5H4O6	-2 cytosol
E4HGLU[c]	erythro-4-hydroxy-L-glutamate(1-)	C5H8NO5	-1 cytosol
CL[c]	cardiolipin	C74.4H139.6O17P2	-2 cytosol
PPA[c]	Propinol adenylate	C13H17N5O8P	-1 cytosol
HBUT[c]	2-Hydroxybutyrate	C4H7O3	-1 cytosol
AAD[c]	5'-acetylphosphoadenosine	C12H15N5O8P	-1 cytosol
HIBUTCOA[c]	(S)-3-Hydroxyisobutyryl-CoA	C25H38N7O18P3S	-4 cytosol
MMSA[c]	(S)-methylmalonaldehydic acid	C4H5O3	-1 cytosol
MMSA[e]	(S)-methylmalonaldehydic acid	C4H5O3	-1 extracellular
ABUT[c]	(S)-2-acetyl-2-hydroxybutanoate	C6H9O4	-1 cytosol
ALCTT[c]	(2S)-2-hydroxy-2-methyl-3-oxobutanoic acid	C5H7O4	-1 cytosol
ARAHE6P[c]	D-arabino-3-Hexulose 6-phosphate	C6H11O9P	-2 cytosol
UDPG2A[c]	UDP-3-O-(3-hydroxytetradecanoyl)glucosamine	C29H50N3O18P2	-1 cytosol

KDOLIPID4[c]	(KDO)-lipid IVA	C76H137N2O30P2	-5 cytosol
K2LIPIV[c]	KDO2-lipid IV(A)	C84H148N2O37P2	-6 cytosol
K2LIPA[c]	Kdo2-lipid A	C110H196N2O39P2	-6 cytosol
ERY3MEM[c]	D-erythro-3-Methylmalate	C5H6O5	-2 cytosol
OHPB[c]	(R)-3-hydroxy-2-oxo-4-phosphonoxybutanoic acid	C4H4O8P	-3 cytosol
PHT[c]	4-(phosphonoxy)-L-threonine	C4H8NO7P	-2 cytosol
4HLT[c]	4-hydroxy-L-threonine	C4H9NO4	0 cytosol
4HLT[e]	4-hydroxy-L-threonine	C4H9NO4	0 extracellular
GAPPN[c]	gamma-glutamyl-beta-aminopropionitrile	C8H13N3O3	0 cytosol
BUOL[e]	1-Butanol	C4H10O	0 extracellular
BUOL[c]	1-Butanol	C4H10O	0 cytosol
POLHYBU[c]	Poly-beta-hydroxybutyrate	C12H18O6	0 cytosol
DIATRAPO[c]	2,5-Diamino-6-(5'-triphosphoryl-3',4'-trihydroxy-2'-oxop	C9H14N5O14P3	-4 cytosol
GA1P[c]	alpha-D-glucosamine 1-phosphate	C6H13NO8P	-1 cytosol
SGDHL[c]	S(8)-glutaryldihydrolipoamide	C13H23NO4S2	0 cytosol
ARBUTIN[e]	Arbutin(e)	C12H16O7	0 extracellular
ARBT6P[c]	Arbutin 6-phosphate	C12H15O10P	-2 cytosol
SALCN6P[c]	Salicin 6-phosphate	C13H17O10P	-2 cytosol
3GMP[c]	guanosine 3'-monophosphate	C10H12N5O8P	-2 cytosol
23CGMP[c]	2',3'-cyclic GMP	C10H11N5O7P	-1 cytosol
23CGMP[e]	2',3'-cyclic GMP	C10H11N5O7P	-1 extracellular
DIMP[c]	2'-deoxy-5'-inosinic acid	C10H11N4O7P	-2 cytosol
DHEND[c]	2,4-dihydroxyhept-2-enedioic acid	C7H8O6	-2 cytosol
DHEND[e]	2,4-dihydroxyhept-2-enedioic acid	C7H8O6	-2 extracellular
LEVM[c]	Levan(m)	C18H32O16	0 cytosol
LEVMN[c]	Levan(m+n)	C42H72O36	0 cytosol
LEVN[c]	Levan(n)	C24H42O21	0 cytosol
LEVN1[c]	Levan(n-1)	C18H32O16	0 cytosol
CELLOT[c]	cellotriose	C18H32O16	0 cytosol
CELLOT[e]	cellotriose	C18H32O16	0 extracellular
FERCH[c]	Ferrichrome	C27H45FeN9O12	0 cytosol
FERCH[e]	Ferrichrome(e)	C27H45FeN9O12	0 extracellular
UACMAMU[c]	UDP-N-acetyl-D-mannosaminouronate	C17H22N3O18P2	-3 cytosol
APOCARB[c]	Apo-[carboxylase]	C7H13N3O2R2	0 cytosol
APOCARB[e]	Apo-[carboxylase]	C7H13N3O2R2	0 extracellular
BCCP[c]	Holo-[carboxylase]	C17H27N5O4SR2	0 cytosol
BCCP[e]	Holo-[carboxylase]	C17H27N5O4SR2	0 extracellular
LK2LIPIV[c]	Lauroyl-KDO2-lipid IV(A)	C96H170N2O38P2	-6 cytosol
DXUL[c]	1-deoxy-D-xylulose	C5H10O4	0 cytosol
DXUL[e]	1-deoxy-D-xylulose	C5H10O4	0 extracellular
DIPLO[c]	Diplopterol	C30H52O	0 cytosol
DIPNE[c]	Diploptene	C30H50	0 cytosol
PRE6Y[c]	Precorrin 6Y	C44H49N4O16	-7 cytosol
PRE6X[c]	Precorrin 6X	C44H46N4O16	-8 cytosol
ACGAL6P[c]	N-Acetyl-D-galactosamine 6-phosphate	C8H14NO9P	-2 cytosol
GAL6P[c]	D-Galactosamine 6-phosphate	C6H13NO8P	-1 cytosol
ADPDGDMHEP[c]	ADP-D-glycero-D-manno-heptose	C17H25N5O16P2	-2 cytosol
ADPHEP[c]	ADP-L-glycero-D-manno-heptose	C17H25N5O16P2	-2 cytosol
HYBY[c]	Hydrogenobyrrinate	C45H54N4O14	-6 cytosol
PRE3B[c]	Precorrin 3B	C43H43N4O17	-7 cytosol
PRE4[c]	Precorrin 4	C44H44N4O17	-8 cytosol
PRE8X[c]	Precorrin 8X	C45H53N4O14	-7 cytosol
PRE5[c]	precorrin 5	C45H46N4O17	-8 cytosol
DGLUNT[c]	2-dehydro-D-gluconic acid	C6H9O7	-1 cytosol
HYBYDA[c]	Hydrogenobyrrinate a,c diamide	C45H58N6O12	-4 cytosol
COB2DIDE[c]	Cob(II)yrinate a,c diamide	C45H56CoN6O12	-4 cytosol
COB1DIDE[c]	Cob(I)yrinate a,c diamide	C45H57CoN6O12	-4 cytosol
ADCODIE[c]	Adenosyl cobyrrinate a,c diamide	C55H68CoN11O15	-4 cytosol
ADCOHEX[c]	Adenosyl cobyrrinate hexaamide	C55H76CoN15O11	0 cytosol
ADOCBI[c]	Adenosyl cobinamide	C58H84CoN16O11	1 cytosol
ADOCBIP[c]	Adenosyl cobinamide phosphate	C58H83CoN16O14P	-1 cytosol
AGDPCBI[c]	adenosine-GDP-cobinamide	C68H95CoN21O21P2	-1 cytosol
PENIA[c]	Penicilloic acid	C9H12N2O5S	-2 cytosol

AMIACE[c]	aminoacetaldehyde	C2H6NO	1 cytosol
DEKEGLU[c]	2-Deoxy-5-keto-D-gluconic acid	C6H9O6	-1 cytosol
DEKG6P[c]	2-Deoxy-5-keto-D-gluconic acid 6-phosphate	C6H8O9P	-3 cytosol
PAC[c]	phenylacetic acid	C8H7O2	-1 cytosol
PAC[e]	phenylacetic acid	C8H7O2	-1 extracellular
AOPBUT[c]	2-amino-3-oxo-4-(phosphonoxy)butanoic acid	C4H6NO7P	-2 cytosol
DGDMH7P[c]	D-glycero-D-manno-heptose 7-phosphate	C7H13O10P	-2 cytosol
DGDMH1P[c]	D-glycero-D-manno-heptose 1-phosphate	C7H13O10P	-2 cytosol
GENTB[c]	gentiobiose	C12H22O11	0 cytosol
GENTB[e]	gentiobiose	C12H22O11	0 extracellular
THFGLU[e]	5,6,7,8-tetrahydrofolyl-L-glutamic acid	C24H27N8O9	-3 extracellular
METSA[c]	Methanesulfonic acid	CH3SO3	-1 cytosol
METSA[e]	Methanesulfonic acid(e)	CH3SO3	-1 extracellular
ADCHOR[c]	4-Amino-4-deoxychorismate	C10H10NO5	-1 cytosol
2ME4P[c]	2-C-methyl-D-erythritol 4-(dihydrogen phosphate)	C5H11O7P	-2 cytosol
4C2ME[c]	4-CDP-2-C-methyl-D-erythritol	C14H23N3O14P2	-2 cytosol
2P4C2ME[c]	4-CDP-2-C-methyl-D-erythritol 2-phosphate	C14H22N3O17P3	-4 cytosol
DX5P[c]	1-deoxy-D-xylulose 5-phosphate	C5H9O7P	-2 cytosol
2MECDP[c]	2-C-methyl-D-erythritol 2,4-cyclic diphosphate	C5H10O9P2	-2 cytosol
DGDMH17BP[c]	D-Glycero-D-manno-heptose 1,7-bisphosphate	C7H12O13P2	-4 cytosol
COSIR[c]	Cobalt-sirohydrochlorin	C42H36CoN4O16	-8 cytosol
COPR3[c]	Cobalt-precorrin 3	C43H41CoN4O16	-7 cytosol
COPR4[c]	Cobalt-precorrin 4	C44H45CoN4O16	-5 cytosol
COPR5[c]	Cobalt-precorrin 5	C45H46CoN4O16	-6 cytosol
COPR6[c]	Cobalt-precorrin 6	C44H45CoN4O16	-7 cytosol
COHYP6[c]	Cobalt-dihydro-precorrin 6	C44H47CoN4O16	-7 cytosol
COPR8[c]	Cobalt-precorrin 8	C45H52CoN4O14	-6 cytosol
3A2OP[c]	3-amino-2-oxopropyl phosphate	C3H7NO5P	-1 cytosol
H2MB4P[c]	(2E)-4-hydroxy-3-methylbut-2-en-1-yl diphosphate	C5H9O8P2	-3 cytosol
HIUR[c]	5-Hydroxyisourate	C5H4N4O4	0 cytosol
DIHY23DIO[c]	(4S)-4,5-Dihydroxypentan-2,3-dione	C5H8O4	0 cytosol
THR3P[c]	L-Threonine O-3-phosphate	C4H8NO6P	-2 cytosol
HYURCAR[c]	5-Hydroxy-2-oxo-4-ureido-2,5-dihydro-1H-imidazole-5-	C5H5N4O5	-1 cytosol
2P14NQ[c]	2-Phytyl-1,4-naphthoquinone	C30H44O2	0 cytosol
2P14NQ[e]	2-Phytyl-1,4-naphthoquinone	C30H44O2	0 extracellular
SULA[c]	Sulfoacetate	C2H2O5S	-2 cytosol
SULA[e]	Sulfoacetate(e)	C2H2O5S	-2 extracellular
HMRGT[c]	S-(hydroxymethyl)glutathione	C11H18N3O7S	-1 cytosol
HMOP[c]	(R)-3-hydroxy-3-methyl-2-oxopentanoic acid	C6H9O4	-1 cytosol
FE2[c]	iron(2+)	Fe	2 cytosol
FE2[e]	iron(2+)	Fe	2 extracellular
FE3[c]	iron(3+)	Fe	3 cytosol
FE3[e]	iron(3+)	Fe	3 extracellular
DHNTCOA[c]	1,4-Dihydroxy-2-naphthoyl-CoA	C32H38N7O19P3S	-4 cytosol
DB4P[c]	3,4-dihydroxy-2-butanone 4-phosphate	C4H7O6P	-2 cytosol
MYOIP[c]	myo-Inositol phosphate	C6H11O9P	-2 cytosol
D5MPO[c]	1,2-Dihydroxy-5-(methylthio)pent-1-en-3-one	C6H10O3S	0 cytosol
DMTP1P[c]	2,3-Diketo-5-methylthiopentyl-1-phosphate	C6H9O6PS	-2 cytosol
HYKEMEP[c]	2-Hydroxy-3-keto-5-methylthiopentenyl-1-phosphate	C6H9O6PS	-2 cytosol
N5CAIR[c]	5-carboxyamino-1-(5-phospho-D-ribosyl)imidazole	C9H11N3O9P	-3 cytosol
HEMEA[c]	Heme A	C49H54FeN4O6	-2 cytosol
HEMEA[e]	Heme A	C49H54FeN4O6	-2 extracellular
HEMEO[c]	heme o	C49H56FeN4O5	-2 cytosol
HEMEO[e]	heme o	C49H56FeN4O5	-2 extracellular
2KLG[c]	2-dehydro-L-idonate	C6H9O7	-1 cytosol
2KLG[e]	2-dehydro-L-idonate	C6H9O7	-1 extracellular
IMGLY[c]	Iminoglycine	C2H2NO2	-1 cytosol
GUL[c]	L-gulose	C6H12O6	0 cytosol
GUL[e]	L-gulose	C6H12O6	0 extracellular
LGALNT[c]	L-Galactonate	C6H11O7	-1 cytosol
LIPOE[c]	Enzyme N6-(lipoyl)lysine	C8H14NOS2R	0 cytosol
LIPOE[e]	Enzyme N6-(lipoyl)lysine	C8H14NOS2R	0 extracellular
DLIPO[c]	Enzyme N6-(dihydrolipoyl)lysine	C8H16NOS2R	0 cytosol

DLIPO[e]	Enzyme N6-(dihydrolipoyl)lysine	C8H16NOS2R	0 extracellular
MBCOA[c]	(S)-2-Methylbutanoyl-CoA	C26H40N7O17P3S	-4 cytosol
METRO[c]	L-methionine R-oxide	C5H11NO3S	0 cytosol
C18OACP[c]	3-Oxooctadecanoyl-[acp]	C29H53N2O9PRS	-1 cytosol
C18HACP[c]	3-Hydroxystearoyl-[acp]	C29H55N2O9PRS	-1 cytosol
C18DACP[c]	trans-Octadec-2-enoyl-[acp]	C29H53N2O8PRS	-1 cytosol
LPACP[c]	Lipoyl-[acp]	C8H13OS3R	0 cytosol
COPR5A[c]	Cobalt-precorrin 5A	C45H45CoN4O16	-7 cytosol
COPR5B[c]	Cobalt-precorrin 5B	C43H43CoN4O16	-7 cytosol
COPR7[c]	Cobalt-precorrin 7	C45H49CoN4O16	-7 cytosol
SUCCYCA[c]	2-Succinyl-5-enolpyruvyl-6-hydroxy-3-cyclohexene-1-ca	C14H13O9	-3 cytosol
C161ACP[c]	Hexadecenoyl-[acyl-carrier protein]	C27H49N2O8PRS	-1 cytosol
SUC6P[c]	Sucrose 6-phosphate	C12H21O14P	-2 cytosol
MURNAC6P[c]	N-acetylmuramic acid 6-phosphate	C11H17NO11P	-3 cytosol
MURNAC6P[e]	N-acetylmuramic acid 6-phosphate	C11H17NO11P	-3 extracellular
SULDO[c]	Sulfur donor	H2S	0 cytosol
COBFII[c]	Cobalt-factor III	C43H38CoN4O16	-8 cytosol
UDCPP[c]	di-trans,poly-cis-undecaprenyl phosphate	C55H89O4P	-2 cytosol
Q8[c]	Ubiquinone-8	C49H74O4	0 cytosol
Q8[e]	Ubiquinone-8	C49H74O4	0 extracellular
PRECZ[c]	Precursor Z	C10H12N5O8P	-2 cytosol
TUR[c]	turanose	C12H22O11	0 cytosol
TUR[e]	turanose	C12H22O11	0 extracellular
2DMMQL8[c]	2-Demethylmenaquinol 8	C50H72O2	0 cytosol
2DMMQN8[c]	2-demethylmenaquinone-8	C50H70O2	0 cytosol
ACYLACP[c]	Acyl-[acyl-carrier protein]	C11H20N2O7PRSR	-1 cytosol
AGLY3P[c]	1-Acyl-sn-glycerol 3-phosphate	C1842H3570O700P100	-200 cytosol
ALAASP[c]	ala-L-asp-L	C7H11N2O5	-1 cytosol
ALAASP[e]	ala-L-asp-L	C7H11N2O5	-1 extracellular
ALAGLN[c]	Ala-Gln	C8H15N3O4	0 cytosol
ALAGLN[e]	Ala-Gln	C8H15N3O4	0 extracellular
ALAGLU[c]	ala-L-glu-L	C8H13N2O5	-1 cytosol
ALAGLU[e]	ala-L-glu-L	C8H13N2O5	-1 extracellular
ALAGLY[c]	L-alanylglycine	C5H10N2O3	0 cytosol
ALAGLY[e]	L-alanylglycine(e)	C5H10N2O3	0 extracellular
ALAHIS[c]	Ala-His	C9H14N4O3	0 cytosol
ALAHIS[e]	Ala-His	C9H14N4O3	0 extracellular
ALALEU[c]	Ala-Leu	C9H18N2O3	0 cytosol
ALALEU[e]	Ala-Leu	C9H18N2O3	0 extracellular
ALATHR[c]	ala-L-Thr-L	C7H14N2O4	0 cytosol
ALATHR[e]	ala-L-Thr-L	C7H14N2O4	0 extracellular
ASENA[c]	Arsenate	HAsO4	-2 cytosol
ASENA[e]	Arsenate	HAsO4	-2 extracellular
ASENI[c]	arsenite	H3AsO3	0 cytosol
ASENI[e]	arsenite	H3AsO3	0 extracellular
BIOMASS[c]	Biomass	R	0 cytosol
BIOMASS[e]	Biomass	R	0 extracellular
BUTSUL[c]	butanesulfonate	C4H8O3S	-1 cytosol
BUTSUL[e]	butanesulfonate(e)	C4H8O3S	-1 extracellular
C150ACP[c]	Pentadecanoyl-[acp]	C26H49N2O8PRS	-1 cytosol
C170ACP[c]	Heptadecanoyl-[acp]	C28H53N2O8PRS	-1 cytosol
CRO4[c]	chromate	O4Cr	-2 cytosol
CRO4[e]	chromate(e)	O4Cr	-2 extracellular
CTETRAOSE[c]	cellotetraose	C24H42O21	0 cytosol
CTETRAOSE[e]	cellotetraose	C24H42O21	0 extracellular
DGLCN[c]	2-dehydro-D-gluconate	C6H9O7	-1 cytosol
DGLCN[e]	2-dehydro-D-gluconate	C6H9O7	-1 extracellular
D12DG[c]	diglucosyl-1,2 diacylglycerol	C4584H8540O1500	0 cytosol
DGLDGLY[e]	diglucosyl-1,2 diacylglycerol	C4630H8460O1500	0 extracellular
DMKH[c]	2-demethylmenaquinol-8	C50H72O2	0 cytosol
DPA[c]	Dipicolinate	C7H3NO4	-2 cytosol
ERY[c]	D-erythrose	C4H8O4	0 cytosol
ERY[e]	D-erythrose	C4H8O4	0 extracellular

ETSUL[c]	ethanesulfonate	C2H4O3S	-1 cytosol
ETSUL[e]	ethanesulfonate(e)	C2H4O3S	-1 extracellular
FA6COA[c]	Iso-C16:0 CoA	C37H62N7O17P3S	-4 cytosol
GLYASN[c]	gly-asn-L	C6H11N3O4	0 cytosol
GLYASN[e]	gly-asn-L(e)	C6H11N3O4	0 extracellular
GLYASNL[c]	glycyl-L-asparagine	C6H11N3O4	0 cytosol
GLYASNL[e]	glycyl-L-asparagine	C6H11N3O4	0 extracellular
GLYASP[c]	gly-asp-L	C6H9N2O5	-1 cytosol
GLYASP[e]	gly-asp-L(e)	C6H9N2O5	-1 extracellular
GLYASPL[c]	N-glycyl-L-aspartic acid	C6H9N2O5	-1 cytosol
GLYASPL[e]	N-glycyl-L-aspartic acid	C6H9N2O5	-1 extracellular
GLYCYS[c]	glycylcysteine	C5H10N2O3S	0 cytosol
GLYCYS[e]	glycylcysteine	C5H10N2O3S	0 extracellular
GLYGLN[c]	L-Glycylglutamine	C7H13N3O4	0 cytosol
GLYGLN[e]	L-Glycylglutamine	C7H13N3O4	0 extracellular
GLYGLU[c]	gly-glu-L	C7H11N2O5	-1 cytosol
GLYGLU[e]	gly-glu-L(e)	C7H11N2O5	-1 extracellular
GLYGLUL[c]	glycyl-L-glutamic acid	C7H11N2O5	-1 cytosol
GLYGLUL[e]	glycyl-L-glutamic acid	C7H11N2O5	-1 extracellular
GLYLEU[c]	Gly-Leu	C8H16N2O3	0 cytosol
GLYLEU[e]	Gly-Leu	C8H16N2O3	0 extracellular
GLYMET[c]	N-Glycyl-L-methionine	C7H14N2O3S	0 cytosol
GLYMET[e]	N-Glycyl-L-methionine	C7H14N2O3S	0 extracellular
GLYPHE[c]	Gly-Phe	C11H14N2O3	0 cytosol
GLYPHE[e]	Gly-Phe	C11H14N2O3	0 extracellular
GLYPRO[c]	gly-pro-L	C7H12N2O3	0 cytosol
GLYPRO[e]	gly-pro-L(e)	C7H12N2O3	0 extracellular
GLYPROL[c]	glycyl-L-Proline	C7H12N2O3	0 cytosol
GLYPROL[e]	glycyl-L-Proline	C7H12N2O3	0 extracellular
GLYTYR[c]	Gly-Tyr	C11H14N2O4	0 cytosol
GLYTYR[e]	Gly-Tyr	C11H14N2O4	0 extracellular
GTA[c]	glycerol teichoic acid (n=45), unlinked, unsubstituted	C151H296N2O238P46	-45 cytosol
GTA2[c]	glycerol teichoic acid (n=45), unlinked, D-ala substituted	C286H612N47O328P46	-45 cytosol
GTA3[c]	glycerol teichoic acid (n=45), unlinked, glucose substituted	C421H749N2O464P46	-45 cytosol
H2[e]	HYDROGEN	H2	0 extracellular
H2[c]	HYDROGEN	H2	0 cytosol
HEXSUL[c]	hexanesulfonate	C6H13O3S	-1 cytosol
HEXSUL[e]	hexanesulfonate(e)	C6H13O3S	-1 extracellular
HG2[c]	Mercury (+2)	Hg	2 cytosol
HG2[e]	Mercury (+2)	Hg	2 extracellular
HPDCOA[c]	heptadecanoyl-CoA(anteiso-C17:0 CoA)	C38H64N7O17P3S	-4 cytosol
IAD[c]	Indole-3-acetamide	C10H10N2O	0 cytosol
LALAGLY[c]	L-alanylglycine	C5H10N2O3	0 cytosol
LALAGLY[e]	L-alanylglycine	C5H10N2O3	0 extracellular
LIPID[c]	LIPID	R	0 cytosol
LIPO2[c]	lipoteichoic acid (n=24), linked, N-acetyl-D-glucosamine	C30984H54140N2400O25500P24	-2400 cytosol
LIPO3[c]	lipoteichoic acid (n=24), linked, D-alanine substituted	C18984H39740N2400O18300P24	-2400 cytosol
LIPO4[c]	lipoteichoic acid (n=24), linked, unsubstituted	C11784H22940O13500P2400	-2400 cytosol
LIPOTA[c]	lipoteichoic acid (n=24), linked, glucose substituted	C26184H46940O25500P2400	-2400 cytosol
LPS_eco[c]	LPS	C171H297N4O88P2	-7 cytosol
METALA[c]	met-L-ala-L	C8H16N2O3S	0 cytosol
METALA[e]	met-L-ala-L	C8H16N2O3S	0 extracellular
MGTA[c]	minor teichoic acid (acetylgalactosamine glucose phosph	C420H750N30O420P30	-30 cytosol
MN2[c]	manganese	Mn	2 cytosol
MN2[e]	manganese	Mn	2 extracellular
N2[c]	nitrogen	N2	0 cytosol
N2[e]	nitrogen	N2	0 extracellular
PEPG[c]	Peptidoglycan subunit	C39H60N8O21	-2 cytosol
PEPTIDO_eco[e]	a peptidoglycan UNITE	C40H62N8O21	-2 extracellular
PEPTX[c]	Peptidoglycan subunit crosslinked	C37H55N7O19	-2 cytosol
PROGLY[c]	L-Prolinyglycine	C7H12N2O3	0 cytosol
PROGLY[e]	L-Prolinyglycine	C7H12N2O3	0 extracellular
PROPACP[c]	Propanoyl-ACP	C14H25N2O8PRS	-1 cytosol

PROTEIN[c]	PROTEIN	R	0 cytosol
PTDCOA[c]	pentadecanoyl-CoA(anteiso-C15:0 CoA)	C36H60N7O17P3S	-4 cytosol
Q8H2[c]	ubiquinol-8	C49H76O4	0 cytosol
RNA[c]	RNA	R	0 cytosol
SELNT[e]	selenate	O4Se	0 extracellular
SOLUBLE_POOLS[c]	SOLUBLE_POOLS	R	0 cytosol
SON[c]	L-xylo-hexos-2-ulose	C6H10O6	0 cytosol
TDCOA[c]	tetradecanoyl-CoA(C14:0 CoA)	C35H58N7O17P3S	-4 cytosol
ZFDP[c]	2-cis,6-trans-farnesyl diphosphate	C15H25O7P2	-3 cytosol
PINS[c]	1-phosphatidyl-1D-myo-inositols	C11H17O13PR2	0 cytosol
HCNO[c]	cyanic acid	CNO	-1 cytosol
HCNO[e]	cyanic acid	CNO	-1 extracellular
AFA[c]	carbamate	CH2NO2	1 cytosol
S4O6[c]	tetrathionate	O6S4	-2 cytosol
TAGL[c]	Triacylglycerol	C6H5O6R3	0 cytosol
MAGL[c]	Monoacylglycerol	C4H7O4R	0 cytosol
FA[c]	fatty acid	R	-1 cytosol
GPGGL[c]	Glycerophosphoglycoglycerolipid	C2401H6666O715P100	0 cytosol
DGDAGL[c]	Diglucoacyldiacylglycerol	C2101H5966O215	0 cytosol
GDAGL[c]	Monoglucoacyldiacylglycerol	C11H16O10R2	0 cytosol
EP[c]	Ethanolamine phosphate	C2H7NO4P	-1 cytosol
CP[c]	Choline phosphate	C5H14NO4P	-1 cytosol
1AG3PE[c]	1-Acyl-sn-glycero-3-phosphoethanolamine	C6H13NO7PR	0 cytosol
2AG3PE[c]	2-Acyl-sn-glycero-3-phosphoethanolamine	C6H13NO7PR	0 cytosol
1AG3PC[c]	1-Acyl-sn-glycero-3-phosphocholine	C9H20NO7PR	0 cytosol
2AG3PC[c]	2-Acyl-sn-glycero-3-phosphocholine	C9H20NO7PR	0 cytosol
PTAT[c]	5-oxopentanoate	C5H7O3	-1 cytosol
GTAT[c]	glutarate	C5H6O4	-2 cytosol
MAAC[c]	4-maleylacetoacetate	C8H6O6	-2 cytosol
I3PYR[c]	indole-3-pyruvic acid	C11H8NO3	-1 cytosol
IAAH[c]	indole acetaldehyde	C10H9NO	0 cytosol
TRPA[c]	tryptaminium	C10H13N2	1 cytosol
PCA[c]	Protocatechuate	C7H5O4	-1 cytosol
POAH[c]	phosphonoacetaldehyde	C2H4O4P	-1 cytosol
AEPO[c]	2-aminoethylphosphonate	C2H8NO3P	0 cytosol
DPUDCP[c]	ditrans,polycis-undecaprenol	C55H90O	0 cytosol
DHPP[c]	7,8-dihydroneopterin 3'-phosphate	C9H12N5O7P	-2 cytosol
THP6C[c]	5,6,7,8-tetrahydropterin-6-carboxylate	C7H8N5O3	-1 cytosol
C7DG[c]	7-carboxylato-7-deazaguanine	C7H5N4O3	-1 cytosol
PREQ0[c]	7-cyano-7-deazaguanine	C7H5N5O	0 cytosol
PREQ1[c]	7-aminomethyl-7-deazaguanine	C7H10N5O	1 cytosol
PDO[c]	propane-1,3-diol	C3H8O2	0 cytosol
PDO[e]	propane-1,3-diol	C3H8O2	0 extracellular
HPPPL[c]	3-hydroxypropanal	C3H6O2	0 cytosol
C100[c]	fatty acid(C10:0)	C10H19O2	-1 cytosol
C130[c]	fatty acid(C12:0)	C12H23O2	-1 cytosol
C130[c]	fatty acid(C13:0)	C13H25O2	-1 cytosol
C140[c]	myristate(n-C14:0)	C14H27O2	-1 cytosol
FA1[c]	Fatty acid (Iso-C14:0)	C14H27O2	-1 Cytosol
C150[c]	fatty acid(iso-C15:0)	C15H29O2	-1 cytosol
FA6[c]	Fatty acid (iso-C16:0)	C16H31O2	-1 Cytosol
FA4[c]	Fatty acid (Anteiso-C15:0)	C15H29O2	-1 Cytosol
HPDCA[c]	heptadecanoate (anteiso-C17:0)	C17H33O2	-1 Cytosol
C160[c]	palmitate(C16:0)	C16H31O2	-1 cytosol
C161[c]	palmitoleic acid(C16:1)	C16H29O2	-1 cytosol
C170[c]	fatty acid(iso-C17:0)	C17H33O2	-1 cytosol
C171[c]	heptadecenoic acid(C17:1)	C17H31O2	-1 cytosol
C180[c]	octadecanoate (C18:0)	C18H35O2	-1 cytosol
C181[c]	oleic acid(C18:1)	C18H33O2	-1 cytosol
C182[c]	fatty acid(C18:2)	C18H31O2	-1 cytosol
DAP[c]	diaminopentane	C5H16N2	2 cytosol
DAP[e]	diaminopentane	C5H16N2	2 extracellular
CO[e]	CO	CO	0 extracellular

CO[c]	CO	CO	0 cytosol
CBCCP[c]	Carboxybiotin-carboxyl-carrier protein	C18H26N5O6SR2	0 cytosol
SPRM[e]	Spermine	C10H30N4	4 extracellular
MMPA[c]	methylmercaptopropionate	C4H7O2S	-1 cytosol
NEU5AC[c]	N-acetyl-beta-neuraminate	C11H18NO9	-1 cytosol
NEU5AC[e]	N-acetyl-beta-neuraminate	C11H18NO9	-1 extracellular
NANMA[c]	N-acylneuraminic acid	C10H16NO9R	-1 cytosol
TPN[c]	TPN	R	0 cytosol
TPNH[c]	TPNH	R	0 cytosol
LACOA[c]	L-lactoyl-CoA	C24H36N7O18P3S	-4 cytosol
C50COA[c]	valeryl-CoA	C26H40N7O17P3S	-4 cytosol
HTPA[c]	(2S,4S)-4-hydroxy-2,3,4,5-tetrahydrodipicolinate	C7H7NO5	-2 cytosol
5APTA[c]	5-aminopentanoate	C5H11NO2	0 cytosol
LPT[c]	(R)-lipoate	C8H13O2S2	-1 cytosol
DHLPT[c]	dihydrolipoate	C8H15O2S2	-1 cytosol
PLA[c]	phenyllactate	C9H9O3	-1 cytosol
15DAP[c]	Cadaverine	C5H16N2	2 cytosol
PROL[c]	n-propanol	C3H8O	0 cytosol
PROL[e]	n-propanol	C3H8O	0 extracellular
C130ACP[c]	C13:0-[acp]	C24H45N2O8PRS	-1 cytosol
C151ACP[c]	C15:1-[acp]	C26H47N2O8PRS	-1 cytosol
C171ACP[c]	oleoyl-[acp]	C28H51N2O8PRS	-1 cytosol
C120[c]	laurate	C12H23O2	-1 cytosol
C140COA[c]	tetradecanoyl-CoA(C14:0 CoA)	C35H58N7O17P3S	-4 cytosol
C160COA[c]	palmitoyl-CoA(n-C16:0 CoA)	C37H62N7O17P3S	-4 cytosol
C161COA[c]	hexadecenoyl-CoA	C37H60N7O17P3S	-4 cytosol
C180COA[c]	Stearoyl-CoA	C39H66N7O17P3S	-4 cytosol
C181COA[c]	oleoyl-CoA	C39H64N7O17P3S	-4 cytosol
C130COA[c]	C13:0 CoA	C34H56N7O17P3S	-4 cytosol
C170COA[c]	heptadecanoyl-CoA(anteiso-C17:0 CoA)	C38H64N7O17P3S	-4 cytosol
C171COA[c]	C17:1 CoA	C38H62N7O17P3S	-4 cytosol
C160IACP[c]	IsoC160ACP	C27H51N2O8PRS	-1 cytosol
C150COA[c]	pentadecanoyl-CoA(anteiso-C15:0 CoA)	C36H60N7O17P3S	-4 cytosol
C182ACP[c]	C18:2-[acp]	C29H51N2O8PRS	-1 cytosol
LYSPG[c]	lysylphosphatidylglycerol	C4284H8440N200O1100P100	0 cytosol
M12DG[c]	monoglucosyl-1,2 diacylglycerol	C3984H7540O1000	0 cytosol
T12DG[c]	triglucosyl-1,2 diacylglycerol	C5184H9540O2000	0 cytosol
PC[c]	Phosphatidylcholine	C10H17NO8PR2	-1 cytosol
BUET[c]	2-butenate	C4H5O2	-1 cytosol
WTA[c]	glycerol teichoic acid	R	0 cytosol
LTA[c]	lipoteichoic acid	R	0 cytosol
RH[c]	a unsulfurated [sulfur donor]	RH	0 cytosol
RSH[c]	a sulfurated [sulfur donor]	RSH	0 cytosol
CAMP[c]	3',5'-cyclic AMP	C10H11N5O6P	-1 cytosol
NACMA[c]	N-acetylmuramoyl-L-alaninate	C14H23N2O9	-1 cytosol
NACMA[e]	N-acetylmuramoyl-L-alaninate	C14H23N2O9	-1 extracellular
MURNAC[e]	N-acetylmuramate	C11H18NO8	-1 extracellular
MURNAC[c]	N-acetylmuramate	C11H18NO8	-1 cytosol
N5MG[c]	N5-methyl-L-glutamine	C6H12N2O3	0 cytosol
EAM[c]	ethylamine	C2H8N	1 cytosol
N5EG[c]	theanine, N5-ethylglutamine	C7H14N2O3	0 cytosol
HMF[c]	5-hydroxymethylfurfural	C6H6O3	1 cytosol
FDCA[c]	furan-2,5-dicarboxylate	C6H2O5	-2 cytosol
H2[e]	HYDROGEN	H2	0 extracellular
NICD[e]	nicotinamide	C6H6N2O	0 extracellular
FAD[e]	FAD	C27H31N9O15P2	-2 extracellular
PENT[e]	pentanoate	C5H9O2	-1 extracellular
HEXA[e]	hexanoic acid	C6H11O2	-1 extracellular
PABA[e]	4-Aminobenzoate	C7H6NO2	-1 extracellular
CRO[e]	crotonate	C4H5O2	-1 extracellular
ACAL[e]	acetaldehyde	C2H4O	0 extracellular
AMOB[e]	S-Adenosyl-4-methylthio-2-oxobutanoate	C15H19N5O6S	0 extracellular
DGLCNT[e]	2-dehydro-D-gluconate	C6H9O7	-1 extracellular

HPRO[e]	trans-4-hydroxy-L-proline	C5H9NO3	0 extracellular
METHOL[e]	methanol	CH4O	0 extracellular
TNDP[c]	all-trans-nonaprenyl diphosphate	C45H73O7P2	-3 cytosol
HCIT[c]	(2R)-homocitrate	C7H7O7	-3 cytosol
IPROP[c]	2-iminopropanoate	C3H4NO2	-1 cytosol
IBUT[c]	2-iminobutanoate	C4H6NO2	-1 cytosol
GBAT[c]	4-guanidinobutanoate	C5H11N3O2	0 cytosol
TMA[c]	trimethylamine	C3H10N	1 cytosol
DTDPVA[c]	dTDP-viosamine	C16H26N3O14P2	-1 cytosol
DTDPAVA[c]	dTDP-N-acetylviosamine	C18H27N3O15P2	-2 cytosol
UDPNAADG[c]	UDP-2-acetamido-2-deoxy-alpha-D-glucuronate	C17H22N3O18P2	-3 cytosol
UDNAG[c]	undecaprenyl diphospho N-acetyl-glucosamine	C63H103NO12P2	-2 cytosol
ACASP[c]	N-acetyl-L-aspartate	C6H7NO5	-2 cytosol
CDGMP[c]	cyclic di-3',5'-GMP	C20H22N10O14P2	-2 cytosol
CMPNAN[c]	CMP-N-acylneuraminate	C19H28N4O16PR	0 cytosol
UDPGAT[c]	UDP-D-galacturonate	C15H19N2O18P2	-3 cytosol
OC60COA[c]	3-oxohexanoyl-CoA	C27H40N7O18P3S	-4 cytosol
HC60COA[c]	3-OH-hexanoyl-CoA	C27H42N7O18P3S	-4 cytosol
H2ECOA[c]	trans-2-hexenoyl-CoA	C27H40N7O17P3S	-4 cytosol
KC50COA[c]	beta-ketovaleryl-CoA	C26H38N7O18P3S	-4 cytosol
HC50COA[c]	(R)-3-hydroxyvaleryl-CoA	C26H40N7O18P3S	-4 cytosol
EC50COA[c]	a cis-2-enoyl-CoA for C50COA	C26H38N7O17P3S	-4 cytosol
TGA[e]	thioglycolate	C2H3O2S	-1 extracellular
HCA[c]	3-phenylpropanoate	C9H9O2	-1 cytosol
HCA[e]	3-phenylpropanoate	C9H9O2	-1 extracellular
HEOL[e]	hexanol	C6H14O	0 extracellular
HEOL[c]	hexanol	C6H14O	0 cytosol
HEAL[c]	1-hexanal	C6H12O	0 cytosol
KC70COA[c]	beta-ketoheptanoyl-CoA	C28H42N7O18P3S	-4 cytosol
HC70COA[c]	(R)-3-hydroxyheptanoyl-CoA	C28H44N7O18P3S	-4 cytosol
EC70COA[c]	a cis-2-enoyl-CoA for C70COA	C28H42N7O17P3S	-4 cytosol
C70COA[c]	heptanoyl-CoA	C28H44N7O17P3S	-4 cytosol
HEPT[c]	heptanoate	C7H13O2	-1 cytosol
HEPT[e]	heptanoate	C7H13O2	-1 extracellular
BUAP[c]	butanoyl phosphate	C4H7O5P	-2 cytosol
DKII[c]	3-deoxy-D-glycero-2,5-hexodiulosonate	C6H7O6	-1 cytosol
DKI[c]	5-dehydro-4-deoxy-D-glucuronate	C6H7O6	-1 cytosol
LXUL5P[c]	L-xylulose 5-phosphate	C5H9O8P	-2 cytosol
DGAL6P[c]	D-galactopyranose 6-phosphate	C6H11O9P	-2 cytosol
IMLTR[c]	Isomaltotriose	C18H32O16	0 cytosol
MLTR[c]	Maltotriose	C18H32O16	0 cytosol
IMLTR[e]	Isomaltotriose	C18H32O16	0 extracellular
MLTR[e]	Maltotriose	C18H32O16	0 extracellular
LAA6P[c]	L-ascorbate 6-phosphate	C6H6O9P	-3 cytosol
URG[c]	(S)-ureidoglycolate	C3H5N2O4	-1 cytosol
3C2MP[c]	3-(carbamoylamino)-2-methylpropanoate	C5H9N2O3	-1 cytosol
3A2MP[c]	(R)-3-amino-2-methylpropanoate	C4H9NO2	0 cytosol
5MTI[c]	5'-S-methyl-5'-thioinosine	C11H14N4O4S	0 cytosol
SCP[c]	L-saccharopine	C11H19N2O6	-1 cytosol
CSPMD[c]	carboxyspermidine	C8H21N3O2	2 cytosol
13DAP[c]	propane-1,3-diamine	C3H12N2	2 cytosol
CNSPMD[c]	carboxynorspermidine	C7H19N3O2	2 cytosol
3PPYR[c]	3-phosphonopyruvate	C3H3O6P	-2 cytosol
SEPI[c]	selenophosphate	HO3PSe	-2 cytosol
CDHGTP[c]	(8S)-3',8'-cyclo-7,8-dihydroguanosine 5'-triphosphate	C10H12N5O14P3	-4 cytosol
CPMP[c]	cyclic pyranopterin phosphate	C10H11N5O7P	-1 cytosol
CBL[c]	Vitamin B12s	C62H89CoN13O14P	0 cytosol
4H2KG[c]	L-4-hydroxy-2-oxoglutarate	C5H4O6	-2 cytosol
DKB[c]	2,3-butanedione	C4H6O2	0 cytosol
3KG6P[c]	3-keto-L-gulonate 6-phosphate	C6H8O10P	-3 cytosol
GALNAG[c]	lacto-N-biose	C14H25NO11	0 cytosol
GCA[c]	glycocholate	C26H42NO6	-1 cytosol
CHA[c]	cholate	C24H39O5	-1 cytosol

C17CYCACP[c]	c17cycACP	C17H29OSR	-1 cytosol
C19CYCACP[c]	c19cycACP	C19H33OSR	-1 cytosol
13DAP[c]	R	R	0 cytosol
3C2MP[c]	R	R	0 cytosol
3PPYR[c]	R	R	0 cytosol
4H2KG[c]	R	R	0 cytosol
5MTI[c]	R	R	0 cytosol
ARABIN[e]	R	R	0 cytosol
CARBO[c]	R	R	0 cytosol
CDHGTP[c]	R	R	0 cytosol
CDPG[c]	CDP-D-glucose	C15H23N3O16P2	-2 cytosol
CDPKDG[c]	R	R	0 cytosol
CELLOB6P[c]	R	R	0 cytosol
CHIB6P[c]	R	R	0 cytosol
CNSPMD[c]	R	R	0 cytosol
CPMP[c]	R	R	0 cytosol
CSPMD[c]	R	R	0 cytosol
DKB[c]	R	R	0 cytosol
DKII[c]	R	R	0 cytosol
DKI[c]	R	R	0 cytosol
FUC1P[c]	R	R	0 cytosol
GL1P[c]	R	R	0 cytosol
LAA6P[c]	R	R	0 cytosol
MAGL[c]	R	R	0 cytosol
MLT6P[c]	R	R	0 cytosol
NSPMD[e]	R	R	0 extracellular
NSPMD[c]	R	R	0 cytosol
PEPTIDO[c]	R	R	0 cytosol
PLIPID[c]	R	R	0 cytosol
PME[c]	R	R	0 cytosol
PPAL[c]	R	R	0 cytosol
RH2[c]	R	R	0 cytosol
R[c]	R	R	0 cytosol
TAGL[c]	R	R	0 cytosol
TEICH[c]	R	R	0 cytosol
TRACE[c]	R	R	0 cytosol
UDPGI[e]	R	R	0 cytosol
15DAP[e]	R	R	0 cytosol
NAGLU[e]	R	R	0 cytosol
POLYGP[c]	(Glycerophosphate)n	C36H86O61P12	0 cytosol
5OPRO[c]	5-oxo-D-proline	C5H7NO3	0 cytosol
5OPRO[e]	5-oxo-D-proline	C5H7NO3	0 extracellular
BYT[c]	Biocytin	C16H28N4O4S	0 cytosol
G14LAC[c]	D-glucaro-1,4-lactone	C6H8O7	0 cytosol
G14LAC[e]	D-glucaro-1,4-lactone	C6H8O7	0 extracellular
MCHIB6P[c]	N'-monoacetylchitobiose-6'-phosphate	C14H26N2O13P	-1 cytosol
DOPAQ[c]	L-dopaquinone	C9H9NO4	0 cytosol
DOPAQ[e]	L-dopaquinone	C9H9NO4	0 extracellular
HQE[e]	hydroquinone	C6H6O2	0 extracellular
HQE[c]	hydroquinone	C6H6O2	0 cytosol
DHBENZ[c]	2,5-dihydroxybenzoate	C7H5O4	-1 cytosol
LUM[c]	lumichrome	C12H10N4O2	0 cytosol
LUM[e]	lumichrome	C12H10N4O2	0 extracellular
RBO[e]	ribitol	C5H12O5	0 extracellular
RBO[c]	ribitol	C5H12O5	0 cytosol
ADPHE[c]	N-acetyl-D-phenylalanine	C11H13NO3	0 cytosol
ADPHE[e]	N-acetyl-D-phenylalanine	C11H13NO3	0 extracellular
OLEA[c]	Oleamide	C18H35NO	0 cytosol
OLEA[e]	Oleamide	C18H35NO	0 extracellular
3DSPHN[c]	3-dehydrosphinganine	C18H37NO2	0 cytosol
SPHN[c]	Sphinganine	C18H39NO2	0 cytosol
PSPHN[c]	Phytosphingosine	C18H39NO3	0 cytosol
PSPHN[e]	Phytosphingosine	C18H39NO3	0 extracellular

FERIB5[c]	ferricytochrome b5	R	0 cytosol
FEROB5[c]	ferrocytochrome b5	R	0 cytosol
TCH[c]	taurocholic acid	C26H45NO7S	0 cytosol
TCH[e]	taurocholic acid	C26H45NO7S	0 extracellular
ASPPHE[c]	Aspartylphenylalanine	C13H16N2O5	0 cytosol
ASPPHE[e]	Aspartylphenylalanine	C13H16N2O5	0 extracellular
GLNTRP[c]	glutaminyltryptophan	C16H20N4O4	0 cytosol
GLNTRP[e]	glutaminyltryptophan	C16H20N4O4	0 extracellular
GLNTYR[c]	glutaminyltyrosine	C14H19N3O5	0 cytosol
GLNTYR[e]	glutaminyltyrosine	C14H19N3O5	0 extracellular
GLYARG[c]	glycylarginine	C8H17N5O3	0 cytosol
GLYARG[e]	glycylarginine	C8H17N5O3	0 extracellular
ILEARG[c]	isoleucylarginine	C12H25N5O3	0 cytosol
ILEARG[e]	isoleucylarginine	C12H25N5O3	0 extracellular
ILEMET[c]	isoleucylmethionine	C11H22N2O3S	0 cytosol
ILEMET[e]	isoleucylmethionine	C11H22N2O3S	0 extracellular
PHEGLY[c]	phenylalanylglycine	C11H14N2O3	0 cytosol
PHEGLY[e]	phenylalanylglycine	C11H14N2O3	0 extracellular
PHEPRO[c]	Phenylalanylproline	C14H18N2O3	0 cytosol
PHEPRO[e]	Phenylalanylproline	C14H18N2O3	0 extracellular
PHEARG[c]	phenylalanylarginine	C15H24N5O3	1 cytosol
PHEARG[e]	phenylalanylarginine	C15H24N5O3	1 extracellular
PROGLY[c]	Prolylglycine	C7H12N2O3	0 cytosol
PROGLY[e]	Prolylglycine	C7H12N2O3	0 extracellular
TRPPRO[c]	tryptophylproline	C16H19N3O3	0 cytosol
TRPPRO[e]	tryptophylproline	C16H19N3O3	0 extracellular
ASPVAL[c]	aspartylvaline	C9H16N2O5	0 cytosol
ASPVAL[e]	aspartylvaline	C9H16N2O5	0 extracellular
10HC180[c]	(R)-10-hydroxyoctadecanoate	C18H35O3	-1 cytosol
SALMET[c]	S-Adenosyl-L-methionine	C15H22N6O5S	-1 cytosol
A6URA[c]	5-Amino-6-(5'-phosphoribosylamino)uracil	C9H13N4O9P	-2 cytosol
AACID[c]	amino acid	C2H4NO2R	0 cytosol
AACID[e]	amino acid	C2H4NO2R	0 extracellular
ACG[c]	7-Aminomethyl-8-carbaguanine	C7H9N5O	0 cytosol
ACG[e]	7-Aminomethyl-8-carbaguanine	C7H9N5O	0 extracellular
ACMUMA[e]	N-Acetylmuramoyl-Ala	C14H24N2O9	0 cytosol
ACPCAR[c]	1-aminocyclopropane-1-carboxylate	C4H7NO2	0 cytosol
ACYLCOA[c]	Acyl-CoA	C22H35N7O17P3SR	0 cytosol
ACYPL[c]	2-Acyl-sn-glycero-3-phosphocholine	C9H20NO7PR	0 cytosol
ADPS[c]	ADP-sugar	C10H14N5O10P2R	0 cytosol
ADRU[c]	5-Amino-6-(1-D-ribitylamino)uracil	C9H16N4O6	0 cytosol
NFORTRNA[c]	N-Formylmethionyl-tRNA	C21H30N6O12PSR(C5H8O6PR) _r	0 cytosol
AG3PC[c]	1-Acyl-sn-glycero-3-phosphocholine	C9H20NO7PR	0 cytosol
AGL3P[c]	1-acyl-sn-glycerol 3-phosphate	C3H6O6PX	-2 cytosol
AG3PHO[e]	1-Acyl-sn-glycerol 3-phosphate	C4H8O7PR	0 cytosol
AGGLULAACID[c]	(5-L-Glutamyl)-L-amino acid	C7H11N2O5R	0 cytosol
OPL[c]	5-Oxoproline	C5H6NO3	-1 cytosol
AHMDP[c]	4-Amino-5-hydroxymethyl-2-methylpyrimidine diphosph	C6H11N3O7P2	0 cytosol
ALD[c]	aldehyde	CHOR	0 cytosol
AMI4IM[c]	1-(5'-Phosphoribosyl)-5-amino-4-imidazolecarboxamide	C9H15N4O8P	0 cytosol
AMOL[c]	Adenylated molybdopterin	C20H23N10O12P2S2	-3 cytosol
ANTCOA[c]	Anthraniloyl-CoA	C28H37N8O17P3S	-4 cytosol
ANT[c]	L-Anticapsin	C9H13NO4	0 cytosol
AOBUT[c]	L-2-Amino-3-oxobutanoic acid	C4H7NO3	0 cytosol
AODIO[c]	alpha,omega-diamine	C2H8N2(C2H4) _n	0 cytosol
APDRU[c]	5-Amino-6-(5'-phospho-D-ribitylamino)uracil	C9H15N4O9P	-2 cytosol
APEN[c]	6-Aminopenicillanate	C8H12N2O3S	0 cytosol
APHO[c]	Acyl phosphate	CH2O5PR	0 cytosol
ASCP[c]	Adenylyl-[sulfur-carrier protein]	C14H19N7O9PR	0 cytosol
BAC[c]	Bacilysin	C12H18N2O5	0 cytosol
BAC[e]	Bacilysin	C12H18N2O5	0 extracellular
BGPHO[c]	2,3-Bis-O-(geranylgeranyl)glycerol 1-phosphate	C43H73O6P	0 cytosol
BSGPHO[c]	2,3-Bis-(O-phytanyl)-sn-glycerol 1-phosphate	C43H87O6P	-2 cytosol

C2ME[c]	4-(Cytidine 5'-diphospho)-2-C-methyl-D-erythritol	C14H23N3O14P2	-2 cytosol
C2PCOA[c]	5-Carboxy-2-pentenoyl-CoA	C27H42N7O19P3S	0 cytosol
CAR[c]	Carboxyphosphate	CHO6P	-2 cytosol
CAR[e]	Carboxyphosphate	CHO6P	-2 extracellular
CCG[c]	7-Carboxy-7-carbaguanine	C7H6N4O3	0 cytosol
CMEPHO[c]	2-(2-Carboxy-4-methylthiazol-5-yl)ethyl phosphate	C7H7NO6PS	-3 cytosol
CMPNACE[c]	CMP-N-acetylneuraminate	C20H31N4O16P	0 cytosol
CMPNGLY[c]	CMP-N-glycolylneuraminate	C20H31N4O17P	0 cytosol
CMYPHO[c]	2-[(2R,5Z)-2-Carboxy-4-methylthiazol-5(2H)-ylidene]etl	C7H10NO6PS	0 cytosol
CN[c]	2',3'-Cyclic nucleotide	C5H8O6PR	0 cytosol
COAGLU[c]	CoA-glutathione	C31H51N10O22P3S2	0 cytosol
COBSHCR[c]	cobalt-sirohydrochlorin	C42H36N4O16Co	-10 cytosol
CRCOA[c]	crotonyl-CoA	C25H36N7O17P3S	-4 cytosol
CYTM[C]	Cytidylyl molybdenum cofactor	C19H22N8O15P2S2Mo	-2 cytosol
DBSHE[e]	12,18-Didecarboxysiroheme	C40H38N4O12Fe	-6 extracellular
DDAH7P[c]	2-Dehydro-3-deoxy-D-arabino-heptonate	C7H13O10P	0 cytosol
DE3DGAL[c]	2-Dehydro-3-deoxy-D-galactonate	C6H10O6	0 cytosol
DGDGNACEGR[c]	alpha-D-Galactosyl-1,3-beta-D-galactosyl-1,4-N-acetyl-l	C20H34NO16R	0 cytosol
DGDMHBIS[c]	D-glycero-beta-D-manno-Heptose 1,7-bisphosphate	C7H12O13P2	-4 cytosol
DGLUND[e]	2-Keto-D-gluconic acid	C6H10O7	0 extracellular
PDGLY[c]	3-Phospho-D-glycerate	C3H4O7P	-3 cytosol
DGNDGR[c]	beta-D-Galactosyl-(1->4)-N-acetyl-beta-D-glucosaminyl	C14H24NO11R	0 cytosol
DIH23DIO[c]	(S)-4,5-Dihydroxypentane-2,3-dione	C5H8O4	0 cytosol
DIH3TRIP[c]	7,8-Dihydroneopterin 3'-triphosphate	C9H12N5O13P3	-4 cytosol
DIH[c]	3,4-Dihydroxyphenylacetate	C8H7O4	-1 cytosol
DMMQL[c]	Demethylmenaquinol	C15H16O2(C5H8)n	0 cytosol
DRASINE[c]	[Dihydrolipoylsine-residue acetyltransferase] S-acetyl	C10H18NO2S2R	0 cytosol
DEO[c]	Deoxynucleoside	C5H9O3R	0 cytosol
DRS2MET[c]	[Dihydrolipoylsine-residue (2-methylpropanoyl)transfer	C12H22NO2S2R	0 cytosol
DSUL[c]	Dimethyl sulfone	C2H6O2S	0 cytosol
ECT[c]	Ectoine	C6H10N2O2	0 cytosol
ECYS[c]	[Enzyme]-cysteine	C4H6N2O2SR2	0 cytosol
ENETRI[c]	(Z)-But-2-ene-1,2,3-tricarboxylate	C7H5O6	-3 cytosol
ENT[c]	Enterochelin	C30H27N3O15	0 cytosol
ESSUL[c]	[Enzyme]-S-sulfanylcysteine	C4H6N2O2S2R2	0 cytosol
ETHCOA[c]	(2S)-Ethylmalonyl-CoA	C26H37N7O19P3S	-5 cytosol
ETHT[c]	Ethylnitronate	C2H5NO2	1 cytosol
FADH2[e]	FADH2	C27H33N9O15P2	-2 extracellular
FECOP[c]	Fe-coproporphyrin III	C36H32N4O8Fe	-4 cytosol
FECOP[e]	Fe-coproporphyrin III	C36H32N4O8Fe	-4 extracellular
GDP4D6DMAN[c]	GDP-4-dehydro-6-deoxy-D-mannose	C16H21N5O15P2	-3 cytosol
GDP6DMAN[c]	GDP-6-deoxy-D-mannose	C16H25N5O15P2	0 cytosol
GLDIP[e]	[GlcNAc-(1->4)-Mur2Ac(oyl-L-Ala-g-D-Glu-A2pm-D- <i>l</i>	C95H156N8O28P2(C40H64N8O2	0 extracellular
GMDIP[c]	[GlcNAc-(1->4)-Mur2Ac(oyl-L-Ala-g-D-Glu-A2pm-D- <i>l</i>	C95H156N8O28P2(C40H64N8O2	0 cytosol
GOXA[c]	gamma-Oxalocrotonate	C6H4O5	-2 cytosol
GPHO[c]	Glycerone phosphate	C3H5O6P	-2 cytosol
GUATD[c]	4-guanidinobutanamide	C5H13N4O	1 cytosol
H78DIHDIP[c]	6-Hydroxymethyl-7,8-dihydropterin diphosphate	C7H8N5O8P2	-3 cytosol
H78DIH[c]	6-(Hydroxymethyl)-7,8-dihydropterin	C7H9N5O2	0 cytosol
HALD[c]	(S)-2-Haloacid	C2H2O2XR	0 cytosol
HAL[c]	(R)-2-Hydroxyacid	C2H3O3R	0 cytosol
HIO[c]	Thiol	HSR	0 cytosol
HPA[c]	4-Hydroxyphenylacetate	C8H7O3	-1 cytosol
HYD6SEM[c]	2-Hydroxymuconate semialdehyde	C6H6O4	0 cytosol
HYDOXO[c]	2-Hydroxy-3-oxosuccinate	C4H2O6	-2 cytosol
HYDPNTE[c]	3-Hydroxypropanoate	C3H5O3	-1 cytosol
HYDTRI[c]	(2S,3R)-3-Hydroxybutane-1,2,3-tricarboxylate	C7H7O7	-3 cytosol
HYD[c]	2-Hydroxymuconate	C6H6O5	0 cytosol
HYP[c]	hypotaurine	C2H7NO2S	0 cytosol
ISCOA[c]	isovaleryl-CoA	C26H40N7O17P3S	-4 cytosol
LCYSSCON[c]	L-Cysteine-S-conjugate	C3H6NO2SR	0 cytosol
LDH4P[c]	L-3,4-Dihydroxybutan-2-one 4-phosphate	C4H7O6P	-2 cytosol
LF1PHO[c]	L-Fucose 1-phosphate	C6H11O8P	-2 cytosol

LGLUAMA[c]	5-L-Glutamyl amino acid	C7H11N2O5R	0 cytosol
LGLUP[c]	(5-L-Glutamyl)-peptide	C7H11N2O5R(C2H2NOR)n	0 cytosol
LLYS[c]	[Lipoyl-carrier protein]-L-lysine	NH2R	0 cytosol
LN6LYS[c]	[lipoyl-carrier protein]-N6-(lipoyl)lysine	C8H14NOS2R	0 cytosol
LORN[c]	L-Ornithine	C5H12N2O2	0 cytosol
BTRI[c]	(Z)-But-2-ene-1,2,3-tricarboxylate	C7H5O6	-3 cytosol
META[c]	Methanesulfinic acid	C8H10N2O2S	0 cytosol
METGCOA[c]	3-Methylglutaconyl-CoA	C27H37N7O19P3S	-5 cytosol
METLGLU[c]	5-Methyltetrahydropteroyltri-L-glutamate	C30H35N9O12	-4 cytosol
METOL[c]	2-Methylquinolin-4-ol	C10H9NO	0 cytosol
MIO[c]	4-Aminobutyraldehyde	C4H10NO	1 cytosol
MOD[c]	Monoamide of dicarboxylate	C2H3NO3(CH2)n	0 cytosol
MOLMC[c]	Molybdoenzyme molybdenum cofactor	C10H12MoN5O8PS2	0 cytosol
MOL[c]	Molybdopterin	C10H11N5O6PS2	-3 cytosol
MQN[c]	Menaquinone	C16H16O2(C5H8)n	0 cytosol
MQN[e]	Menaquinone	C16H16O2(C5H8)n	0 extracellular
MQL[c]	Menaquinol	C16H18O2(C5H8)n	0 cytosol
MTH[c]	4-Methyl-5-(2-phosphooxyethyl)thiazole	C6H8NO4PS	-2 cytosol
N3PHO[c]	Nucleoside 3'-phosphate	C5H10O7PR	0 cytosol
N56DIM[c]	N1-(5-Phospho-alpha-D-ribose)-5,6-dimethylbenzimidazole	C14H17N2O7P	-2 cytosol
N6LL[c]	N6-(L-1,3-Dicarboxypropyl)-L-lysine	C11H19N2O6	-1 cytosol
NA6PI[c]	N-Acyl-D-mannosamine 6-phosphate	C7H13NO9PR	0 cytosol
NACE24DIA[c]	N(alpha)-Acetyl-L-2,4-diaminobutyrate	C6H12N2O3	0 cytosol
NACE9PLO[c]	N-Acetylneuraminate 9-phosphate	C11H20NO12P	0 cytosol
NACE[c]	N-Acetylneuraminate	C11H18NO9	-1 cytosol
NA9PI[c]	N-Acylneuraminate 9-phosphate	C10H17NO12PR	0 cytosol
NALPHE[c]	N-Acetyl-L-phenylalanine	C11H12NO3	-1 cytosol
NAN[c]	N-Acylneuraminate	C10H16NO9R	0 cytosol
NOL[c]	4-Nitrophenol	C6H4NO3	-1 cytosol
NPHO[c]	4-Nitrophenyl phosphate	C6H4NO6P	-2 cytosol
NSUCLOXO[c]	N-Succinyl-2-L-amino-6-oxoheptanedioate	C11H15NO8	0 cytosol
OACID[c]	2-Oxo acid	C2HO3R	0 cytosol
OCT[c]	Octanoyl-[acp]	C8H15OSR	0 cytosol
OGLU[c]	2-Oxoglutaramate	C5H6NO4	-1 cytosol
OPD[c]	Oligopeptide	C2H4NO2R(C2H2NOR)n	0 cytosol
OPD[e]	Oligopeptide	C2H4NO2R(C2H2NOR)n	0 cytosol
OSUC[c]	2-Oxosuccinamate	C4H4NO4	-1 cytosol
OXA[c]	Oxalurate	C3H4N2O4	0 cytosol
OXOBB[c]	15-Oxo-beta-bilirubin	C33H34N4O7	0 cytosol
OXODBI[c]	5-Oxo-delta-bilirubin	C33H34N4O7	0 cytosol
OXODC[c]	3-Oxo-5,6-dehydrosuberyl-CoA	C29H44N7O20P3S	0 cytosol
OXOG[c]	2-Oxoglutaramate	C5H7NO4	0 cytosol
P4C2ME[c]	2-Phospho-4-(cytidine 5'-diphospho)-2-C-methyl-D-erytl	C14H22N3O17P3	-4 cytosol
PHECOAc[c]	Phenylacetyl-CoA	C29H38N7O17P3S	-4 cytosol
OXOP[c]	5-Oxoproline	C5H7NO3	-1 cytosol
PPG[c]	2-phosphoglycolate	C2H2O6P	-3 cytosol
QIL[c]	quinol	C6H6O2	0 cytosol
QUI[c]	Quinone	C6H4O2	0 cytosol
RCH[c]	RCH2NH2	CH4NR	0 cytosol
RFMN[c]	Reduced FMN	C17H21N4O9P	-2 cytosol
RTA[c]	(R,R)-Tartaric acid	C4H4O6	-2 cytosol
SED[c]	Sedoheptulose	C7H14O7	0 cytosol
SMET5TDS[c]	S-methyl-5'-thioadenosine	C11H15N5O3S	0 cytosol
SULCP[c]	Sulfur-carrier protein	C4H7N2O3R	0 cytosol
SULLTE[c]	(2R)-3-Sulfolactate	C3H4O6S	-2 cytosol
METCOA[c]	3-Methylglutaconyl-CoA	C27H37N7O19P3S	-5 cytosol
TETLGLU[c]	Tetrahydropteroyltri-L-glutamate	C29H33N9O12	-4 cytosol
METMCP[c]	6-Methylmercaptopurine	C6H6N4S	0 cytosol
THISULCP[c]	Thiocarboxy-[sulfur-carrier protein]	C4H7N2O2SR	0 cytosol
TRANSDCOA[c]	trans-2,3-Dehydroacyl-CoA	C24H37N7O17P3SR	0 cytosol
TRILAT[c]	Trimethylammonioacetate	C5H11NO2	0 cytosol
TRILAT[e]	Trimethylammonioacetate	C5H11NO2	0 extracellular
TRNAA[c]	tRNA adenine	C10H14N5O7P(C5H8O6PR)n(C5	0 cytosol

TRNAC6ISO[c]	tRNA containing 6-isopentenyladenosine	C15H22N5O7P(C5H8O6PR)n(C5	0 cytosol
UDPADG[c]	UDP-alpha-D-galactose	C15H22N2O17P2	-2 cytosol
UDPADLAHU[c]	UDP-2-acetamido-2,6-dideoxy-beta-L-arabino-hexos-4-yl	C17H25N3O16P2	0 cytosol
UDPADLT[c]	UDP-2-acetamido-2,6-dideoxy-beta-L-talose	C17H25N3O16P2	-2 cytosol
UDPM[c]	UDPMurNAc(oyl-L-Ala-D-gamma-Glu-L-Lys-D-Ala-D-	C40H65N9O26P2	0 cytosol
UDPNADMLADGLULYS[c]	UDP-N-acetylmuramoyl-L-alanyl-gamma-D-glutamyl-L-	C34H55N7O24P2	0 cytosol
UDPNAMAGMDAPIM[c]	UDP-N-acetylmuramoyl-L-alanyl-gamma-D-glutamyl-mu	C35H51N7O26P2	-4 cytosol
UNLDDD[c]	Undecaprenyl-diphospho-N-acetylmuramoyl-(N-acetylgl	C94H156N8O26P2	0 cytosol
UNLDDD[e]	Undecaprenyl-diphospho-N-acetylmuramoyl-(N-acetylgl	C94H156N8O26P2	0 extracellular
URE[c]	Ureidoacrylate	C4H6N2O3	0 cytosol
CYC[e]	Cyclomaltodextrin	(C6H10O5)n	0 extracellular
MEL[c]	Maltodextrin	H2O(C6H10O5)n	0 cytosol
MEL[e]	Maltodextrin	H2O(C6H10O5)n	0 extracellular
ACE[c]	Acetamide	C2H5NO	0 cytosol
HSO3[c]	HSO3-	HSO3	0 cytosol
LAACID[c]	L-Amino acid	C2H4NO2R	0 cytosol
MOA[c]	(S)-3-Methyl-2-oxopentanoic acid	C6H9O3	-1 cytosol
NI[e]	NI	NI	0 extracellular
DP[c]	DP[c]	R	0 cytosol
E[c]	E[c]	R	0 cytosol
GMADIP[e]	GMADIP[e]	R	0 extracellular
NADM6PI[c]	NADM6PI[c]	R	0 cytosol
NADPHc][c]	NADPHc][c]	R	0 cytosol
NI[c]	NI[c]	R	0 cytosol
3MOA[c]	3MOA[c]	R	0 cytosol
ETFLA[c]	electron-transfer flavoprotein	R	0 cytosol
RETFLA[c]	reduced electron-transfer flavoprotein	R	0 cytosol
NAALACID[c]	an N-acyl-aliphatic-L-amino acid	R	0 cytosol
CYSSCG[c]	an L-cysteine-S-conjugate	R	0 cytosol
NALORN[c]	N2-acetyl-L-ornithine	C7H14N2O3	0 cytosol
GLUS[c]	L-glutamate-5-semialdehyde	C5H9NO3	0 cytosol
LTHI[c]	L-thiocysteine	C3H7NO2S2	0 cytosol
RFDNC[c]	reduced ferredoxin [iron-sulfur] cluster	R	0 cytosol
OFDNC[c]	oxidized ferredoxin [iron-sulfur] cluster	R	0 cytosol
4HYDPDE[c]	4-Hydroxyphenylacetaldehyde	C8H8O2	0 cytosol
2AMO[c]	2-aminomuconate	C6H6NO4	-1 cytosol
3MOB[c]	3-Methyl-2-oxobutanoic acid	C5H8O3	-1 cytosol
HYMEBU[c]	3-Hydroxy-3-methyl-2-oxobutanoic acid	C5H7O4	-1 cytosol
UNDERGLUME[c]	Undecaprenyl-diphospho-N-acetylmuramoyl-(N-acetylgl	C95H152N8O28P2	-4 cytosol
UNDIP[c]	di-trans,poly-cis-Undecaprenyl diphosphate	C55H89O7P2	-3 cytosol
DIANTP[c]	2,5-Diaminopyrimidine nucleoside triphosphate	C9H14N5O14P3	-4 cytosol
DIATRAPO[c]	2,5-Diamino-6-(5'-triphosphoryl-3',4'-trihydroxy-2'-oxop	C9H14N5O14P3	-4 cytosol
AHDT[c]	2-Amino-4-hydroxy-6-(erythro-1,2,3-trihydroxypropyl)d	C9H12N5O13P3	-4 cytosol
BETALD[c]	Betaine aldehyde	C5H12NO	1 Cytosol
12DISNGL[c]	1,2-Diacyl-sn-glycerol	C3430H6660O500	0 cytosol
DHP[c]	7,8-Dihydroneopterin	C9H13N5O4	0 cytosol
HDCA[c]	hexadecanoate (n-C16:0)	C16H31O2	-1 Cytosol
PTDCA[c]	pentadecanoate (C15:0)	C15H29O2	-1 Cytosol
TTDCA[c]	tetradecanoate (C14:0)	C14H27O2	-1 Cytosol
3HHDCOA[c]	(S)-3-Hydroxyhexadecanoyl-CoA	C37H62N7O18P3S	-4 cytosol
OXOHECOA[c]	3-Oxohexanoyl-CoA	C27H40N7O18P3S	-4 cytosol
3HBUT[c]	(R)-3-Hydroxybutanoate	C4H7O3	-1 cytosol
CDPDIGLY[c]	CDP-diacylglycerol	C4330H7760N300O1500P200	-200 cytosol
DHAP[c]	Dihydroxyacetone phosphate	C3H5O6P	-2 cytosol
ADPRIB[c]	ADP-ribose	C15H21N5O14P2	-2 Cytosol
1AMIMDE[c]	1-(5'-Phosphoribosyl)-5-amino-4-imidazolecarboxamide	C9H13N4O8P	-2 cytosol
AIMICAR[c]	5-Amino-4-imidazolecarboxamide	C4H6N4O	0 cytosol
DCAMP[c]	N6-(1,2-Dicarboxyethyl)-AMP	C14H14N5O11P	-4 cytosol
ADE[c]	Adenine	C5H5N5	0 cytosol
2DR1P[c]	2-Deoxy-D-ribose 1-phosphate	C5H9O7P	-2 cytosol
THIOR[c]	Thioredoxin	C10H15N4O4S2R4	1 cytosol
DEXYP[c]	2'-Deoxyinosine 5'-phosphate	C10H11N4O7P	-2 cytosol
GU3P[c]	Guanosine 3'-phosphate	C10H12N5O8P	-2 cytosol

GDPTP[c]	Guanosine 3'-diphosphate 5'-triphosphate	C10H12N5O20P5	-6 cytosol
THYMD[c]	Thymidine	C10H14N2O5	0 cytosol
THYM[c]	Thymine	C5H6N2O2	0 Cytosol
DTHYM[c]	dihydrothymine	C5H8N2O2	0 cytosol
UDPAC6CAR[c]	UDP-N-acetylmuramoyl-L-alanyl-D-glutamyl-6-carboxy-	C41H61N9O28P2	-4 cytosol
UAMR[c]	UDP-N-acetylmuramate	C20H28N3O19P2	-3 cytosol
UAMAG[c]	UDP-N-acetylmuramoyl-L-alanyl-D-glutamate	C28H39N5O23P2	-4 cytosol
UAMA[c]	UDP-N-acetylmuramoyl-L-alanine	C23H33N4O20P2	-3 cytosol
CDPGLYC[c]	CDP-glycerol	C12H19N3O13P2	-2 Cytosol
S3MEOXOPE[c]	(S)-3-Methyl-2-oxopentanoic acid	C6H9O3	-1 cytosol
S3MEOXOPE[e]	(S)-3-Methyl-2-oxopentanoic acid	C6H9O3	-1 cytosol
UDPNACVG[c]	UDP-N-acetyl-3-(1-carboxyvinyl)-D-glucosamine	C20H26N3O19P2	-3 cytosol
23DHMP[c]	(R)-2,3-Dihydroxy-3-methylpentanoate	C6H11O4	-1 cytosol
2AHBUT[c]	(S)-2-Aceto-2-hydroxybutanoate	C6H9O4	-1 cytosol
RHYOXOATE[c]	(R)-3-Hydroxy-3-methyl-2-oxopentanoate	C6H9O4	-1 cytosol
MHIS[c]	N(pi)-Methyl-L-histidine	C7H11N3O2	0 cytosol
GMEACP[c]	Glutaryl-[acyl-carrier protein] methyl ester	C17H29N2O10PRS	-1 cytosol
MMEACP[c]	Malonyl-[acyl-carrier protein] methyl ester	C15H25N2O10PRS	-1 cytosol
PMEACP[c]	Pimeloyl-[acyl-carrier protein] methyl ester	C19H33N2O10PRS	-1 cytosol
GCSHNLYS[c]	[Glycine cleavage system H]-N6-octanoyl-L-lysine		0 cytosol
LCPE[c]	Lipoyl-carrier protein E2		0 cytosol
LCPENLYS[c]	[Lipoyl-carrier protein E2]-N6-octanoyl-L-lysine		0 cytosol
GCSH[c]	Glycine cleavage system H		0 cytosol
10FTHF	10-Formyltetrahydrofolate	C20H21N7O7	-2 Cytosol
12D3K5M	1,2-dihydroxy-3-keto-5-methylthiopentene	C6H8O3S	-2 Cytosol
12DAG3P_BS[c]	1,2-diacyl-sn-glycerol 3-phosphate	C3436H6572O800P100	-200 Cytosol
12DGR_BS[c]	1,2-diacylglycerol	C3436H6672O500	0 Cytosol
13DPG	3-Phospho-D-glyceroyl phosphate	C3H4O10P2	-4 Cytosol
14BXYL	1,4-beta-D-Xylan	C5H8O4	0 Cytosol
14GLUN	1,4-alpha-D-Glucan	C6H10O5	0 Cytosol
15DAP	1,5-Diaminopentane	C5H16N2	2 Cytosol
1AG3P_BS[c]	1-Acyl-sn-glycerol 3-phosphate	C1868H3636O700P100	-200 Cytosol
1P3H5C	L-1-Pyrroline-3-hydroxy-5-carboxylate	C5H6NO3	-1 Cytosol
1PYR5C	1-Pyrroline-5-carboxylate	C5H6NO2	-1 Cytosol
23CAMP	2',3'-Cyclic AMP	C10H11N5O6P	-1 Cytosol
23CCMP	2',3'-Cyclic CMP	C9H11N3O7P	-1 Cytosol
23CGMP	2',3'-Cyclic GMP	C10H11N5O7P	-1 Cytosol
23CUMP	2',3'-Cyclic UMP	C9H10N2O8P	-1 Cytosol
23DDHB	2,3-Dihydro-2,3-dihydroxybenzoate	C7H7O4	-1 Cytosol
23DHB	2,3-Dihydroxybenzoate	C7H5O4	-1 Cytosol
23DHBA	(2,3-Dihydroxybenzoyl)adenylate	C17H17N5O10P	-1 Cytosol
23DHDP	2,3-Dihydrodipicolinate	C7H5NO4	-2 Cytosol
23DHMB	(R)-2,3-Dihydroxy-3-methylbutanoate	C5H9O4	-1 Cytosol
23DHMP	(R)-2,3-Dihydroxy-3-methylpentanoate	C6H11O4	-1 Cytosol
25AICS	(S)-2-[5-Amino-1-(5-phospho-D-ribosyl)imidazole-4-car	C13H15N4O12P	-4 Cytosol
25DHPP	2,5-Diamino-6-hydroxy-4-(5'-phosphoribosylamino)-pyri	C9H14N5O8P	-2 Cytosol
25DOP	2,5-Dioxopentanoate	C5H5O4	-1 Cytosol
26DAPIME	N6-Acetyl-LL-2,6-diaminopimelate	C9H15N2O5	-1 Cytosol
26DAP-LL	LL-2,6-Diaminoheptanedioate	C7H14N2O4	0 Cytosol
26DAP-M	meso-2,6-Diaminoheptanedioate	C7H14N2O4	0 Cytosol
2AHBUT	(S)-2-Aceto-2-hydroxybutanoate	C6H9O4	-1 Cytosol
2AHHMD	2-Amino-4-hydroxy-6-hydroxymethyl-7,8-dihydropteridi	C7H8N5O8P2	-3 Cytosol
2AHHMP	2-Amino-4-hydroxy-6-hydroxymethyl-7,8-dihydropteridi	C7H9N5O2	0 Cytosol
2AOBUT	L-2-Amino-3-oxobutanoate	C4H7NO3	0 Cytosol
2CPR5P	1-(2-Carboxyphenylamino)-1-deoxy-D-ribulose 5-phospl	C12H13NO9P	-3 Cytosol
2DDA7P	2-Dehydro-3-deoxy-D-arabino-heptonate 7-phosphate	C7H10O10P	-3 Cytosol
2DDG6P	2-Dehydro-3-deoxy-D-gluconate 6-phosphate	C6H8O9P	-3 Cytosol
2DDGLCN	2-Dehydro-3-deoxy-D-gluconate	C6H9O6	-1 Cytosol
2DDGLCN[e]	2-Dehydro-3-deoxy-D-gluconate (extracellular)	C6H9O7	-1 Extracellular
2DHP	2-Dehydropantoate	C6H9O4	-1 Cytosol
2DMMQ7	2-Demethylmenaquinone 7	C45H62O2	0 Cytosol
2DR1P	2-Deoxy-D-ribose 1-phosphate	C5H9O7P	-2 Cytosol
2DR5P	2-Deoxy-D-ribose 5-phosphate	C5H9O7P	-2 Cytosol

2H3K5M	2-hydroxy-3-keto-5-methylthiopentenyl-1-phosphate	C6H8O6PS	-3 Cytosol
2H3OPP	2-Hydroxy-3-oxopropanoate	C3H3O4	-1 Cytosol
2HBUT	2-Hydroxybutyrate	C4H7O3	-1 Cytosol
2HXMP	2-(Hydroxymethyl)phenol	C7H8O2	0 Cytosol
2HXMP[e]	2-(Hydroxymethyl)phenol (extracellular)	C7H8O2	0 Extracellular
2INS	2-Inosose	C6H10O6	0 Cytosol
2IPPM	2-Isopropylmaleate	C7H8O4	-2 Cytosol
2KMB	2-keto-4-methylthiobutyrate	C5H7O3S	-1 Cytosol
2MAACOA[c]	2-Methyl-3-acetoacetyl-CoA	C26H38N7O18P3S	-4 Cytosol
2MAHMP	2-Methyl-4-amino-5-hydroxymethylpyrimidine diphosphate	C6H8N3O7P2	-3 Cytosol
2MB2COA[c]	trans-2-Methylbut-2-enoyl-CoA	C26H38N7O17P3S	-4 Cytosol
2MBCOA	2-Methylbutanoyl-CoA	C26H40N7O17P3S	-4 Cytosol
2MCIT	2-Hydroxybutane-1,2,3-tricarboxylate	C7H7O7	-3 Cytosol
2ME4P	2-C-methyl-D-erythritol 4-phosphate	C5H11O7P	-2 Cytosol
2MECDP	2-C-methyl-D-erythritol 2,4-cyclodiphosphate	C5H10O9P2	-2 Cytosol
2MOP	2-Methyl-3-oxopropanoate	C4H5O3	-1 Cytosol
2MP2COA[c]	2-Methylprop-2-enoyl-CoA	C25H36N7O17P3S	-4 Cytosol
2O3MPT	(R)-2-Oxo-3-methylpentanoate	C6H9O3	-1 Cytosol
2OBUT	2-Oxobutanoate	C4H5O3	-1 Cytosol
2P4C2ME	2-phospho-4-(cytidine 5'-diphospho)-2-C-methyl-D-erythritol	C14H22N3O17P3	-4 Cytosol
2PCPGC	2-Protocatechoylphloroglucinolcarboxylate	C14H7O8	-3 Cytosol
2PG	D-Glycerate 2-phosphate	C3H4O7P	-3 Cytosol
2PG[e]	D-Glycerate 2-phosphate (extracellular)	C3H4O7P	-3 Extracellular
2PGLYC	2-Phosphoglycolate	C2H2O6P	-3 Cytosol
2PGLYC[e]	2-Phosphoglycolate (extracellular)	C2H2O6P	-3 Extracellular
2SHCHC	2-Succinyl-6-hydroxy-2,4-cyclohexadiene-1-carboxylate	C11H10O6	-2 Cytosol
34HPP	3-(4-Hydroxyphenyl)pyruvate	C9H7O4	-1 Cytosol
36DAHx	(3S)-3,6-Diaminohexanoate	C6H15N2O2	1 Cytosol
3AMBA	3-aminobutanoic acid	C4H9NO2	0 Cytosol
3AMBA[e]	3-aminobutanoic acid (extracellular)	C4H9NO2	0 Extracellular
3AMP	3'-AMP	C10H12N5O7P	-2 Cytosol
3AMP[e]	3'-AMP (extracellular)	C10H12N5O7P	-2 Extracellular
3C2HMP	3-Carboxy-2-hydroxy-4-methylpentanoate	C7H10O5	-2 Cytosol
3C3HMP	3-Carboxy-3-hydroxy-4-methylpentanoate	C7H10O5	-2 Cytosol
3C4MOP	3-Carboxy-4-methyl-2-oxopentanoate	C7H8O5	-2 Cytosol
3CMP	3'-CMP	C9H12N3O8P	-2 Cytosol
3CMP[e]	3'-CMP (extracellular)	C9H12N3O8P	-2 Extracellular
3DHQ	3-Dehydroquinate	C7H9O6	-1 Cytosol
3DHSK	3-Dehydroshikimate	C7H7O5	-1 Cytosol
3GMP	Guanosine 3'-phosphate	C10H12N5O8P	-2 Cytosol
3GMP[e]	Guanosine 3'-phosphate (extracellular)	C10H12N5O8P	-2 Extracellular
3HBYCOA[c]	(S)-3-Hydroxybutyryl-CoA	C25H38N7O18P3S	-4 Cytosol
3HDCOA[c]	(S)-3-Hydroxydecanoyl-CoA	C31H50N7O18P3S	-4 Cytosol
3HDDCOA[c]	(S)-3-Hydroxydodecanoyl-CoA	C33H54N7O18P3S	-4 Cytosol
3HHCOA[c]	(S)-3-Hydroxyhexanoyl-CoA	C27H42N7O18P3S	-4 Cytosol
3HHDCOA	(S)-3-Hydroxyhexadecanoyl-CoA	C37H62N7O18P3S	-4 Cytosol
3HMBCOA[c]	(S)-3-Hydroxy-2-methylbutyryl-CoA	C26H40N7O18P3S	-4 Cytosol
3HMP[c]	3-Hydroxy-2-methylpropanoate	C4H7O3	-1 Cytosol
3HOCOA[c]	(S)-3-Hydroxyoctanoyl-CoA	C29H46N7O18P3S	-4 Cytosol
3HTDCOA[c]	(S)-3-Hydroxytetradecanoyl-CoA	C35H58N7O18P3S	-4 Cytosol
3IG3P	C'-(3-Indolyl)-glycerol 3-phosphate	C11H12NO6P	-2 Cytosol
3MOB	3-Methyl-2-oxobutanoate	C5H7O3	-1 Cytosol
3MOP	(S)-3-Methyl-2-oxopentanoate	C6H9O3	-1 Cytosol
3MTP	3-Methylthiopropionate	C4H7O2S	-1 Cytosol
3ODCOA[c]	3-Oxodecanoyl-CoA	C31H48N7O18P3S	-4 Cytosol
3ODDCOA[c]	3-Oxododecanoyl-CoA	C33H52N7O18P3S	-4 Cytosol
3OHCOA[c]	3-Oxohexanoyl-CoA	C27H40N7O18P3S	-4 Cytosol
3OHDCOA[c]	3-Oxohexadecanoyl-CoA	C37H60N7O18P3S	-4 Cytosol
3OOCOA[c]	3-Oxo-octanoyl-CoA	C29H44N7O18P3S	-4 Cytosol
3OTDCOA[c]	3-Oxotetradecanoyl-CoA	C35H56N7O18P3S	-4 Cytosol
3PG	3-Phospho-D-glycerate	C3H4O7P	-3 Cytosol
3PG[e]	3-Phospho-D-glycerate (extracellular)	C3H4O7P	-3 Extracellular
3PHP	3-Phosphohydroxypyruvate	C3H2O7P	-3 Cytosol

3PSME	5-O-(1-Carboxyvinyl)-3-phosphoshikimate	C10H9O10P	-4 Cytosol
3UMP	3'-UMP	C9H11N2O9P	-2 Cytosol
3UMP[e]	3'-UMP (extracellular)	C9H11N2O9P	-2 Extracellular
46DH2SDOHN	(4S)-4,6-Dihydroxy-2,5-dioxohexanoate	C6H7O6	-1 Cytosol
4ABUT	4-Aminobutanoate	C4H9NO2	0 Cytosol
4ABUT[e]	4-Aminobutanoate (extracellular)	C4H9NO2	0 Extracellular
4ABUTN	4-Aminobutanal	C4H10NO	1 Cytosol
4ABZ	4-Aminobenzoate	C7H6NO2	-1 Cytosol
4ADCHO	4-amino-4-deoxychorismate	C10H10NO5	-1 Cytosol
4AHMMP	4-Amino-5-hydroxymethyl-2-methylpyrimidine	C6H9N3O	0 Cytosol
4AMPM	4-Amino-2-methyl-5-phosphomethylpyrimidine	C6H8N3O4P	-2 Cytosol
4C2ME	4-(cytidine 5'-diphospho)-2-C-methyl-D-erythritol	C14H23N3O14P2	-2 Cytosol
4HGLU	4-Hydroxy-L-glutamate	C5H8NO5	-1 Cytosol
4IZP	4-Imidazolone-5-propanoate	C6H7N2O3	-1 Cytosol
4MHETZ	4-Methyl-5-(2-hydroxyethyl)-thiazole	C6H9NOS	0 Cytosol
4MOP	4-Methyl-2-oxopentanoate	C6H9O3	-1 Cytosol
4MPETZ	4-Methyl-5-(2-phosphoethyl)-thiazole	C6H8NO4PS	-2 Cytosol
4PASP	4-Phospho-L-aspartate	C4H6NO7P	-2 Cytosol
4PPAN	D-4'-Phosphopantothenate	C9H15NO8P	-3 Cytosol
4PPCYS	N-((R)-4-Phosphopantothenoyl)-L-cysteine	C12H20N2O9PS	-3 Cytosol
4R5AU	4-(1-D-Ribitylamino)-5-aminouracil	C9H16N4O6	0 Cytosol
5AIZC	5-amino-1-(5-phospho-D-ribosyl)imidazole-4-carboxylat	C9H11N3O9P	-3 Cytosol
5AOP	5-Amino-4-oxopentanoate	C5H9NO3	0 Cytosol
5APRBU	5-Amino-6-(5'-phosphoribitylamino)uracil	C9H15N4O9P	-2 Cytosol
5APRU	5-Amino-6-(5'-phosphoribosylamino)uracil	C9H13N4O9P	-2 Cytosol
5D4DGLCR	5-Dehydro-4-deoxy-D-glucarate	C6H6O7	-2 Cytosol
5DH4DGLCN	5-Dehydro-4-deoxy-D-glucuronate	C6H7O6	-1 Cytosol
5MCSN	5-Methylcytosine	C5H7N3O	0 Cytosol
5MDR1P	5-Methylthio-5-deoxy-D-ribose 1-phosphate	C6H11O7PS	-2 Cytosol
5MDRU1P	5-Methylthio-5-deoxy-D-ribose 1-phosphate	C6H11O7PS	-2 Cytosol
5MTA	5-Methylthioadenosine	C11H15N5O3S	0 Cytosol
5MTHF	5-Methyltetrahydrofolate	C20H24N7O6	-1 Cytosol
5MTR	5-Methylthio-D-ribose	C6H12O4S	0 Cytosol
5MTR[e]	5-Methylthio-D-ribose (extracellular)	C6H12O4S	0 Extracellular
6AMPENC	6-Aminopenicillanate	C8H13N2O3S	1 Cytosol
6PGC	6-Phospho-D-gluconate	C6H10O10P	-3 Cytosol
6PGC[e]	6-Phospho-D-gluconate (extracellular)	C6H10O10P	-3 Extracellular
6PGG	6-Phospho-beta-D-glucosyl-(1,4)-D-glucose	C12H21O14P	-2 Cytosol
6PGL	6-phospho-D-glucono-1,5-lactone	C6H9O9P	-2 Cytosol
6PTHP	6-Pyruvoyl-5,6,7,8-tetrahydropterin	C9H11N5O3	0 Cytosol
8AONN	8-Amino-7-oxononanoate	C9H17NO3	0 Cytosol
AACOAc[c]	Acetoacetyl-CoA	C25H36N7O18P3S	-4 Cytosol
ABT-L	L-Arabinitol	C5H12O5	0 Cytosol
ABT-L[e]	L-Arabinitol (extracellular)	C5H12O5	0 Extracellular
AC	Acetate	C2H3O2	-1 Cytosol
AC[e]	Acetate (extracellular)	C2H3O2	-1 Extracellular
ACAC[c]	Acetoacetate	C4H5O3	-1 Cytosol
ACAC[e]	Acetoacetate (extracellular)	C4H5O3	-1 Extracellular
ACALD	Acetaldehyde	C2H4O	0 Cytosol
ACAMOXM	N-Acetyl-L-2-amino-6-oxopimelate	C9H11NO6	-2 Cytosol
ACCOA	Acetyl-CoA	C23H34N7O17P3S	-4 Cytosol
ACG5P	N-Acetyl-L-glutamyl 5-phosphate	C7H9NO8P	-3 Cytosol
ACG5SA	N-Acetyl-L-glutamate 5-semialdehyde	C7H10NO4	-1 Cytosol
ACGAM	N-Acetyl-D-glucosamine	C8H15NO6	0 Cytosol
ACGAM[e]	N-Acetyl-D-glucosamine (extracellular)	C8H15NO6	0 Extracellular
ACGAM1P	N-Acetyl-D-glucosamine 1-phosphate	C8H14NO9P	-2 Cytosol
ACGAM6P	N-Acetyl-D-glucosamine 6-phosphate	C8H14NO9P	-2 Cytosol
ACGLU	N-Acetyl-L-glutamate	C7H9NO5	-2 Cytosol
ACMALT	Acetyl-maltose	C14H24O12	0 Cytosol
ACMAM	N-Acetyl-D-muramote	C11H18NO8	-1 Cytosol
ACMAMA	N-Acetyl-D-muramoyl-L-alanine	C14H23N2O9	-1 Cytosol
ACMANA	N-Acetyl-D-mannosamine	C8H15NO6	0 Cytosol
ACMANA[e]	N-Acetyl-D-mannosamine (extracellular)	C8H15NO6	0 Extracellular

ACNAM	N-Acetylneuraminate	C11H18NO9	-1 Cytosol
ACNAM[e]	N-Acetylneuraminate (extracellular)	C11H18NO9	-1 Extracellular
ACORN	N2-Acetyl-L-ornithine	C7H14N2O3	0 Cytosol
ACP	acyl carrier protein	C11H21N2O7PRS	-1 Cytosol
ACSER	O-Acetyl-L-serine	C5H9NO4	0 Cytosol
ACTN-R	(R)-Acetoin	C4H8O2	0 Cytosol
ACTN-R[e]	(R)-Acetoin (extracellular)	C4H8O2	0 Extracellular
ACTP	Acetyl phosphate	C2H3O5P	-2 Cytosol
ADE	Adenine	C5H5N5	0 Cytosol
ADE[e]	Adenine (extracellular)	C5H5N5	0 Extracellular
ADN	Adenosine	C10H13N5O4	0 Cytosol
ADN[e]	Adenosine (extracellular)	C10H13N5O4	0 Extracellular
ADP	ADP	C10H12N5O10P2	-3 Cytosol
ADPGLC	ADPglucose	C16H23N5O15P2	-2 Cytosol
ADPRIB	ADPribose	C15H21N5O14P2	-2 Cytosol
AGM	Agmatine	C5H16N4	2 Cytosol
AHCYS	S-Adenosyl-L-homocysteine	C14H20N6O5S	0 Cytosol
AHDT	2-Amino-4-hydroxy-6-(erythro-1,2,3-trihydroxypropyl)d	C9H12N5O13P3	-4 Cytosol
AICAR	5-Amino-1-(5-Phospho-D-ribosyl)imidazole-4-carboxam	C9H13N4O8P	-2 Cytosol
AIR	5-amino-1-(5-phospho-D-ribosyl)imidazole	C8H12N3O7P	-2 Cytosol
AKG	2-Oxoglutarate	C5H4O5	-2 Cytosol
AKG[e]	2-Oxoglutarate (extracellular)	C5H4O5	-2 Extracellular
ALAALA	D-Alanyl-D-alanine	C6H12N2O3	0 Cytosol
ALAALA[e]	D-Alanyl-D-alanine (extracellular)	C6H12N2O3	0 Extracellular
ALA-B	beta-Alanine	C3H7NO2	0 Cytosol
ALA-B[e]	beta-Alanine (extracellular)	C3H7NO2	0 Extracellular
ALAC-S	(S)-2-Acetolactate	C5H7O4	-1 Cytosol
ALA-D	D-Alanine	C3H7NO2	0 Cytosol
ALA-D[e]	D-Alanine (extracellular)	C3H7NO2	0 Extracellular
ALA-L	L-Alanine	C3H7NO2	0 Cytosol
ALA-L[e]	L-Alanine (extracellular)	C3H7NO2	0 Extracellular
ALA-L-ASN-L	Ala-Asn	C7H13N3O4	0 Cytosol
ALA-L-ASP-L	ala-L-asp-L	C7H11N2O5	-1 Cytosol
ALA-L-ASP-L[e]	ala-L-asp-L (extracellular)	C7H11N2O5	-1 Extracellular
ALA-L-GLN-L	Ala-Gln	C8H15N3O4	0 Cytosol
ALA-L-GLN-L[e]	Ala-Gln (extracellular)	C8H15N3O4	0 Extracellular
ALA-L-GLU-L	ala-L-glu-L	C8H13N2O5	-1 Cytosol
ALA-L-GLU-L[e]	ala-L-glu-L (extracellular)	C8H13N2O5	-1 Extracellular
ALA-L-HIS-L	Ala-His	C9H14N4O3	0 Cytosol
ALA-L-HIS-L[e]	Ala-His (extracellular)	C9H14N4O3	0 Extracellular
ALA-L-ILE-L	Ala-Ile	C9H18N2O3	0 Cytosol
ALA-L-LEU-L	Ala-Leu	C9H18N2O3	0 Cytosol
ALA-L-LEU-L[e]	Ala-Leu (extracellular)	C9H18N2O3	0 Extracellular
ALA-L-MET-L	Ala-Met	C8H16N2O3S	0 Cytosol
ALA-L-PHE-L	Ala-Phe	C12H16N2O3	0 Cytosol
ALA-L-SER-L	Ala-Ser	C6H12N2O4	0 Cytosol
ALA-L-THR-L	ala-L-Thr-L	C7H14N2O4	0 Cytosol
ALA-L-THR-L[e]	ala-L-Thr-L (extracellular)	C7H14N2O4	0 Extracellular
ALA-L-TRP-L	Ala-Trp	C14H17N3O3	0 Cytosol
ALA-L-TYR-L	Ala-Tyr	C12H16N2O4	0 Cytosol
ALA-L-VAL-L	Ala-Val	C8H16N2O3	0 Cytosol
ALLTN	Allantoin	C4H6N4O3	0 Cytosol
ALLTN[e]	Allantoin (extracellular)	C4H6N4O3	0 Extracellular
ALLTT	Allantoate	C4H7N4O4	-1 Cytosol
ALTRN	D-Altronate	C6H11O7	-1 Cytosol
AMACALD	Aminoacetaldehyde	C2H5NO	0 Cytosol
AMET	S-Adenosyl-L-methionine	C15H23N6O5S	1 Cytosol
AMETAM	S-Adenosylmethioninamine	C14H24N6O3S	2 Cytosol
AMOB	S-Adenosyl-4-methylthio-2-oxobutanoate	C15H19N5O6S	0 Cytosol
AMP	AMP	C10H12N5O7P	-2 Cytosol
AMP[e]	AMP (extracellular)	C10H12N5O7P	-2 Extracellular
ANTH	Anthranilate	C7H6NO2	-1 Cytosol
ANTIM	Antimonite	Sb	3 Cytosol

ANTIM[e]	Antimonite (extracellular)	Sb	3 Extracellular
APOACP	apoprotein [acyl carrier protein]	RHO	0 Cytosol
APS	Adenosine 5'-phosphosulfate	C10H12N5O10PS	-2 Cytosol
ARAB-D	D-Arabinose	C5H10O5	0 Cytosol
ARAB-D[e]	D-Arabinose (extracellular)	C5H10O5	0 Extracellular
ARAB-L	L-Arabinose	C5H10O5	0 Cytosol
ARAB-L[e]	L-Arabinose (extracellular)	C5H10O5	0 Extracellular
ARBT[e]	Arbutin (extracellular)	C12H16O7	0 Extracellular
ARBT6P	Arbutin 6-phosphate	C12H15O10P	-2 Cytosol
ARG-L	L-Arginine	C6H15N4O2	1 Cytosol
ARG-L[e]	L-Arginine (extracellular)	C6H15N4O2	1 Extracellular
ARGP	L-Arginine phosphate	C6H14N4O5P	-1 Cytosol
ARGP[e]	L-Arginine phosphate (extracellular)	C6H14N4O5P	-1 Extracellular
ARGSUC	N(omega)-(L-Arginino)succinate	C10H17N4O6	-1 Cytosol
ARSENB	ARSENOBETAINE	C5H11AsO2	0 Cytosol
ARSENB[e]	ARSENOBETAINE (extracellular)	C5H11AsO2	0 Extracellular
ARSNA	Arsenate	AsHO4	-2 Cytosol
ARSNA[e]	Arsenate (extracellular)	AsHO4	-2 Extracellular
ARSNi2	arsenite	AsH3O3	0 Cytosol
ARSNi2[e]	arsenite (extracellular)	AsH3O3	0 Extracellular
ASN-L	L-Asparagine	C4H8N2O3	0 Cytosol
ASN-L[e]	L-Asparagine (extracellular)	C4H8N2O3	0 Extracellular
ASP-L	L-Aspartate	C4H6NO4	-1 Cytosol
ASP-L[e]	L-Aspartate (extracellular)	C4H6NO4	-1 Extracellular
ASPSA	L-Aspartate 4-semialdehyde	C4H7NO3	0 Cytosol
ATP	ATP	C10H12N5O13P3	-4 Cytosol
B2COA[c]	trans-But-2-enoyl-CoA	C25H36N7O17P3S	-4 Cytosol
BETALD	Betaine aldehyde	C5H12NO	1 Cytosol
BILEA	Bile acid	C24H39O5	-1 Cytosol
BILEA[e]	Bile acid (extracellular)	C24H39O5	-1 Extracellular
BTAL	Butanal	C4H8O	0 Cytosol
BTCOA[c]	Butanoyl-CoA	C25H38N7O17P3S	-4 Cytosol
BTD-RR	(R,R)-2,3-Butanediol	C4H10O2	0 Cytosol
BTD-RR[e]	(R,R)-2,3-Butanediol (extracellular)	C4H10O2	0 Extracellular
BTN	Biotin	C10H15N2O3S	-1 Cytosol
BUT[c]	butyrate	C4H7O2	-1 Cytosol
BUT[e]	butyrate	C4H7O2	-1 Extracellular
BUTPI	Butanoyl phosphate	C4H7O5P	-2 Cytosol
BUTS	butanesulfonate	C4H9O3S	-1 Cytosol
BUTS[e]	Butanesulfonate (extracellular)	C4H9O3S	-1 Extracellular
CA2	Calcium	Ca	2 Cytosol
CA2[e]	Calcium (extracellular)	Ca	2 Extracellular
CBASP	N-Carbamoyl-L-aspartate	C5H6N2O5	-2 Cytosol
CBL2	Cob(II)alamin	C62H89CoN13O14P	7 Cytosol
CBL2[e]	Cob(II)alamin (extracellular)	C62H89CoN13O14P	7 Extracellular
CBP	Carbamoyl phosphate	CH2NO5P	-2 Cytosol
CD2	Cadmium	Cd	2 Cytosol
CD2[e]	Cadmium (extracellular)	Cd	2 Extracellular
CDLP_BS[c]	cardiolipin (B. subtilis)	C7172H13744O1700P200	-200 Cytosol
CDP	CDP	C9H12N3O11P2	-3 Cytosol
CDPDAG_BS[c]	CDPdiacylglycerol (B. subtilis)	C4336H7772N300O1500P200	-200 Cytosol
CDPGLYC	CDPglycerol	C12H19N3O13P2	-2 Cytosol
CELLB[e]	cellobiose (extracellular)	C12H22O11	0 Extracellular
CGLY	Cys-Gly	C5H10N2O3S	0 Cytosol
CGLY[e]	Cys-Gly (extracellular)	C5H10N2O3S	0 Extracellular
CH4S	Methanethiol	CH4S	0 Cytosol
CHITOB	Chitobiose	C16H28N2O11	0 Cytosol
CHITOB[e]	Chitobiose (extracellular)	C16H28N2O11	0 Extracellular
CHOL[c]	Choline	C5H14NO	1 Cytosol
CHOL[e]	Choline (extracellular)	C5H14NO	1 Extracellular
CHOLS	Choline sulfate	C5H13NO4S	0 Cytosol
CHOLS[e]	Choline sulfate (extracellular)	C5H13NO4S	0 Extracellular
CHOR	Chorismate	C10H8O6	-2 Cytosol

CHOR[e]	Chorismate (extracellular)	C10H8O6	-2 Extracellular
CIT	Citrate	C6H5O7	-3 Cytosol
CIT[e]	Citrate (extracellular)	C6H5O7	-3 Extracellular
CITR-L	L-Citrulline	C6H13N3O3	0 Cytosol
CITR-L[e]	L-Citrulline (extracellular)	C6H13N3O3	0 Extracellular
CMP	CMP	C9H12N3O8P	-2 Cytosol
CMP[e]	CMP (extracellular)	C9H12N3O8P	-2 Extracellular
CO	Carbon monoxide	CO	0 Cytosol
CO2	CO2	CO2	0 Cytosol
CO2[e]	CO2 (extracellular)	CO2	0 Extracellular
COA	Coenzyme A	C21H32N7O16P3S	-4 Cytosol
COBALT2	Co2+	Co	2 Cytosol
COBALT2[e]	Co2+ (extracellular)	Co	2 Extracellular
CPPPG3	Coproporphyrinogen III	C36H40N4O8	-4 Cytosol
CRN	L-Carnitine	C7H15NO3	0 Cytosol
CRN[e]	L-Carnitine (extracellular)	C7H15NO3	0 Extracellular
CRO4	chromate	CrO4	-2 Cytosol
CRO4[e]	chromate (extracellular)	CrO4	-2 Extracellular
CSN	Cytosine	C4H5N3O	0 Cytosol
CSN[e]	Cytosine (extracellular)	C4H5N3O	0 Extracellular
CTBT	crotonobetaine	C7H13NO2	0 Cytosol
CTBT[e]	Crotonobetaine (extracellular)	C7H13NO2	0 Extracellular
CTP	CTP	C9H12N3O14P3	-4 Cytosol
CU2	Cu2+	Cu	2 Cytosol
CU2[e]	Cu2+ (extracellular)	Cu	2 Extracellular
CYSAM	Cysteamine	C2H8NS	1 Cytosol
CYS-L	L-Cysteine	C3H7NO2S	0 Cytosol
CYS-L[e]	L-Cysteine (extracellular)	C3H7NO2S	0 Extracellular
CYTH-L	L-Cystathionine	C7H14N2O4S	0 Cytosol
CYST-L	L-Cystine	C6H12N2O4S2	0 Cytosol
CYST-L[e]	L-Cystine (extracellular)	C6H12N2O4S2	0 Extracellular
CYTD	Cytidine	C9H13N3O5	0 Cytosol
CYTD[e]	Cytidine (extracellular)	C9H13N3O5	0 Extracellular
D12DG_BS[c]	diglucosyl-1,2 diacylglycerol	C4636H8672O1500	0 Cytosol
DAD-2	Deoxyadenosine	C10H13N5O3	0 Cytosol
DAD-2[e]	Deoxyadenosine (extracellular)	C10H13N5O3	0 Extracellular
DADP	dADP	C10H12N5O9P2	-3 Cytosol
DAMP	dAMP	C10H12N5O6P	-2 Cytosol
DANN	7,8-Diaminononanoate	C9H21N2O2	1 Cytosol
DATP	dATP	C10H12N5O12P3	-4 Cytosol
DB4P	3,4-dihydroxy-2-butanone 4-phosphate	C4H7O6P	-2 Cytosol
DC2COA[c]	trans-Dec-2-enoyl-CoA	C31H48N7O17P3S	-4 Cytosol
DCA	Decanoate	C10H19O2	-1 Cytosol
DCAL	decanal	C10H20O	0 Cytosol
DCAMP	N6-(1,2-Dicarboxyethyl)-AMP	C14H14N5O11P	-4 Cytosol
DCCOA[c]	Decanoyl-CoA	C31H50N7O17P3S	-4 Cytosol
DCDP	dCDP	C9H12N3O10P2	-3 Cytosol
DCMP	dCMP	C9H12N3O7P	-2 Cytosol
DCTP	dCTP	C9H12N3O13P3	-4 Cytosol
DCYT	Deoxycytidine	C9H13N3O4	0 Cytosol
DCYT[e]	Deoxycytidine (extracellular)	C9H13N3O4	0 Extracellular
DDCA	dodecanoate (C12:0)	C12H23O2	-1 Cytosol
DDCAL	Dodecanal	C12H24O	0 Cytosol
DDCOA[c]	Dodecanoyl-CoA (n-C12:0CoA)	C33H54N7O17P3S	-4 Cytosol
DEXTRIN	Dextrin	C12H20O10	0 Cytosol
DEXTRIN[e]	Dextrin (extracellular)	C12H20O10	0 Extracellular
DGDP	dGDP	C10H12N5O10P2	-3 Cytosol
DGMP	dGMP	C10H12N5O7P	-2 Cytosol
DGSN	Deoxyguanosine	C10H13N5O4	0 Cytosol
DGTP	dGTP	C10H12N5O13P3	-4 Cytosol
DHA	Dihydroxyacetone	C3H6O3	0 Cytosol
DHA[e]	Dihydroxyacetone (extracellular)	C3H6O3	0 Extracellular
DHAP	Dihydroxyacetone phosphate	C3H5O6P	-2 Cytosol

DHF	7,8-Dihydrofolate	C19H19N7O6	-2 Cytosol
DHNA	1,4-Dihydroxy-2-naphthoate	C11H7O4	-1 Cytosol
DHNPT	2-Amino-4-hydroxy-6-(D-erythro-1,2,3-trihydroxypropyl)-5-oxo-1,4-dihydro-2-naphthoate	C9H13N5O4	0 Cytosol
DHOR-S	(S)-Dihydroorotate	C5H5N2O4	-1 Cytosol
DHPT	Dihydropteroate	C14H13N6O3	-1 Cytosol
DIALA-L	Ala-Ala	C6H12N2O3	0 Cytosol
DIASPRM	N1,N12-Diacetylspermine	C14H32N4O2	2 Cytosol
DIMP	dIMP	C10H12N4O7P	-1 Cytosol
DIN	Deoxyinosine	C10H12N4O4	0 Cytosol
DJENK	Djenkolate	C7H14N2O4S2	0 Cytosol
DJENK[e]	Djenkolate (extracellular)	C7H14N2O4S2	0 Extracellular
DKMPP	2,3-diketo-5-methylthio-1-phosphopentane	C6H9O6PS	-2 Cytosol
DMLZ	6,7-Dimethyl-8-(1-D-ribityl)lumazine	C13H18N4O6	0 Cytosol
DMPP	Dimethylallyl diphosphate	C5H9O7P2	-3 Cytosol
DNAD	Deamino-NAD+	C21H24N6O15P2	-2 Cytosol
DPA	Dipicolinate	C7H3NO4	-2 Cytosol
DPCOA	Dephospho-CoA	C21H33N7O13P2S	-2 Cytosol
DRIB	Deoxyribose	C5H10O4	0 Cytosol
DRIB[e]	Deoxyribose (extracellular)	C5H10O4	0 Extracellular
DTBT	Dethiobiotin	C10H17N2O3	-1 Cytosol
DTDP	dTDP	C10H13N2O11P2	-3 Cytosol
DTMP	dTMP	C10H13N2O8P	-2 Cytosol
DTMP[e]	dTMP (extracellular)	C10H13N2O8P	-2 Extracellular
DTPCUDCPP[c]	di-trans,poly-cis-Undecaprenyl diphosphate	C55H89O7P2	-3 Cytosol
DTTP	dTTP	C10H13N2O14P3	-4 Cytosol
DUDP	dUDP	C9H11N2O11P2	-3 Cytosol
DUMP	dUMP	C9H11N2O8P	-2 Cytosol
DURI	Deoxyuridine	C9H12N2O5	0 Cytosol
DUTP	dUTP	C9H11N2O14P3	-4 Cytosol
DXYL5P	1-deoxy-D-xylulose 5-phosphate	C5H9O7P	-2 Cytosol
E4P	D-Erythrose 4-phosphate	C4H7O7P	-2 Cytosol
ECTOINE	ectoine	C6H12N2O2	0 Cytosol
ECTOINE[e]	ectoine (extracellular)	C6H12N2O2	0 Extracellular
EIG3P	D-erythro-1-(Imidazol-4-yl)glycerol 3-phosphate	C6H9N2O6P	-2 Cytosol
ETHA[c]	Ethanolamine	C2H8NO	1 Cytosol
ETHA[e]	Ethanolamine (extracellular)	C2H8NO	1 Extracellular
ETHS	ethanesulfonate	C2H5O3S	-1 Cytosol
ETHS[e]	ethanesulfonate (extracellular)	C2H5O3S	-1 Extracellular
ETOH	Ethanol	C2H6O	0 Cytosol
ETOH[e]	Ethanol (extracellular)	C2H6O	0 Extracellular
F1P	D-Fructose 1-phosphate	C6H11O9P	-2 Cytosol
F6P	D-Fructose 6-phosphate	C6H11O9P	-2 Cytosol
F6P[e]	D-Fructose 6-phosphate (extracellular)	C6H11O9P	-2 Extracellular
FA1	Fatty acid (Iso-C14:0)	C14H27O2	-1 Cytosol
FA10[c]	Fatty acid (Anteiso-C17:1)	C17H31O2	-1 Cytosol
FA10COA[c]	Anteiso-C17:1 CoA	C38H62N7O17P3S1	-4 Cytosol
FA11[c]	Fatty acid (Iso-C17:0)	C17H33O2	-1 Cytosol
FA11COA[c]	Iso-C17:0 CoA	C38H64N7O17P3S1	-4 Cytosol
FA12[c]	Fatty acid (Anteiso-C17:0)	C17H33O2	-1 Cytosol
FA12COA[c]	Anteiso-C17:0 CoA	C38H64N7O17P3S1	-4 Cytosol
FA1COA[c]	Iso-C14:0 CoA	C35H58N7O17P3S1	-4 Cytosol
FA3[c]	Fatty acid (Iso-C15:0)	C15H29O2	-1 Cytosol
FA3COA[c]	Iso-C15:0 CoA	C36H60N7O17P3S1	-4 Cytosol
FA4	Fatty acid (Anteiso-C15:0)	C15H29O2	Cytosol
FA4COA[c]	Anteiso-C15:0 CoA	C36H60N7O17P3S1	-4 Cytosol
FA5[c]	Fatty acid (Iso-C16:1)	C16H29O2	-1 Cytosol
FA5COA[c]	Iso-C16:1 CoA	C37H60N7O17P3S1	-4 Cytosol
FA6	Fatty acid (iso-C16:0)	C16H31O2	-1 Cytosol
FA6COA	Iso-C16:0 CoA	C37H62N7O17P3S1	-4 Cytosol
FA9[c]	Fatty acid (Iso-C17:1)	C17H31O2	-1 Cytosol
FA9COA[c]	Iso-C17:1 CoA	C38H62N7O17P3S1	-4 Cytosol
FAD	FAD	C27H31N9O15P2	-2 Cytosol
FADH2	FADH2	C27H33N9O15P2	-2 Cytosol

FALD	Formaldehyde	CH2O	0 Cytosol
FDP	D-Fructose 1,6-bisphosphate	C6H10O12P2	-4 Cytosol
FE2	Fe2+	Fe	2 Cytosol
FE2[e]	Fe2+ (extracellular)	Fe	2 Extracellular
FE3	Fe3+	Fe	3 Cytosol
FE3[e]	Fe3+ (extracellular)	Fe	3 Extracellular
FERRICH	Ferrichrome	C24H38FeN9O11	0 Cytosol
FERRICH[e]	Ferrichrome (extracellular)	C24H38FeN9O11	0 Extracellular
FERXA	Ferroxamine	C25H46FeN6O8	4 Cytosol
FERXA[e]	Ferroxamine (extracellular)	C25H46FeN6O8	4 Extracellular
FGAM	N2-Formyl-N1-(5-phospho-D-ribose)lyglycinamide	C8H13N2O9P	-2 Cytosol
FICYTC	Ferricytochrome c	C42H50FeN8O6S2	3 Cytosol
FMET	N-Formyl-L-methionine	C6H10NO3S	-1 Cytosol
FMETTRNA	N-Formylmethionyl-tRNA	C6H11NO3SX	1 Cytosol
FMN	flavin mononucleotide	C17H19N4O9P	-2 Cytosol
FMNRD	flavin mononucleotide reduced	C17H21N4O9P	-2 Cytosol
FOCYTC	Ferrocycytochrome c	C42H50FeN8O6S2	2 Cytosol
FOL	Folate	C19H18N7O6	-1 Cytosol
FOL[e]	Folate (extracellular)	C19H18N7O6	-1 Extracellular
FOR	Formate	CH1O2	-1 Cytosol
FOR[e]	Formate (extracellular)	CH1O2	-1 Extracellular
FORGLU	N-Formimidoyl-L-glutamate	C6H9N2O4	-1 Cytosol
FPRAM	2-(Formamido)-N1-(5-phospho-D-ribose)lyacetamidine	C8H14N3O8P	-2 Cytosol
FPRICA	5-Formamido-1-(5-phospho-D-ribose)lyimidazole-4-carboxamide	C10H13N4O9P	-2 Cytosol
FRDP	Farnesyl diphosphate	C15H25O7P2	-3 Cytosol
FRMD	Formamide	CH3NO	0 Cytosol
FRU	D-Fructose	C6H12O6	0 Cytosol
FRU[e]	D-Fructose (extracellular)	C6H12O6	0 Extracellular
FRUUR	D-Fructuronate	C6H9O7	-1 Cytosol
FUM	Fumarate	C4H2O4	-2 Cytosol
FUM[e]	Fumarate (extracellular)	C4H2O4	-2 Extracellular
G15LAC	D-Glucono-1,5-lactone	C6H10O6	0 Cytosol
G16BP	D-Glucose 1,6-bisphosphate	C6H10O12P2	-4 Cytosol
G1P	D-Glucose 1-phosphate	C6H11O9P	-2 Cytosol
G1P[e]	D-Glucose 1-phosphate (extracellular)	C6H11O9P	-2 Extracellular
G1P-B	beta-D-Glucose 1-phosphate	C6H11O9P	-2 Cytosol
G3P	Glyceraldehyde 3-phosphate	C3H5O6P	-2 Cytosol
G3PC	sn-Glycero-3-phosphocholine	C8H20NO6P	0 Cytosol
G3PE	sn-Glycero-3-phosphoethanolamine	C5H14NO6P	0 Cytosol
G3PG	Glycerophosphoglycerol	C6H14O8P	-1 Cytosol
G6P	D-Glucose 6-phosphate	C6H11O9P	-2 Cytosol
G6P[e]	D-Glucose 6-phosphate (extracellular)	C6H11O9P	-2 Extracellular
G6P-B	beta-D-glucose 6-phosphate	C6H11O9P	-2 Cytosol
GAL	D-Galactose	C6H12O6	0 Cytosol
GAL[e]	D-Galactose (extracellular)	C6H12O6	0 Extracellular
GAL1P	alpha-D-Galactose 1-phosphate	C6H11O9P	-2 Cytosol
GALCTR-D	D-Galactarate	C6H8O8	-2 Cytosol
GALCTR-D[e]	D-Galactarate (extracellular)	C6H8O8	-2 Extracellular
GALMAN	Galactomannan	C6H10O5	0 Cytosol
GALOGS	Galactose oligosaccharide	C6H10O5	0 Cytosol
GALT[e]	Galactitol (extracellular)	C6H14O6	0 Extracellular
GALT1P	Galactitol 1-phosphate	C6H13O9P	-2 Cytosol
GALUR	D-Galacturonate	C6H9O7	-1 Cytosol
GALUR[e]	D-Galacturonate (extracellular)	C6H9O7	-1 Extracellular
GAM[e]	D-Glucosamine (extracellular)	C6H14NO5	1 Extracellular
GAM1P	D-Glucosamine 1-phosphate	C6H13NO8P	-1 Cytosol
GAM6P	D-Glucosamine 6-phosphate	C6H13NO8P	-1 Cytosol
GAM6P[e]	D-Glucosamine 6-phosphate (extracellular)	C6H13NO8P	-1 Extracellular
GAR	N1-(5-Phospho-D-ribose)lyglycinamide	C7H14N2O8P	-1 Cytosol
GBBTN	gamma-butyrobetaine	C7H15NO2	0 Cytosol
GBBTN[e]	gamma-butyrobetaine (extracellular)	C7H15NO2	0 Extracellular
GCALD	Glycolaldehyde	C2H4O2	0 Cytosol
GDP	GDP	C10H12N5O11P2	-3 Cytosol

GDPTP	Guanosine 3'-diphosphate 5'-triphosphate	C10H11N5O20P5	-7 Cytosol
GGDP[c]	Geranylgeranyl diphosphate	C20H33O7P2	-3 Cytosol
GLC-D	D-Glucose	C6H12O6	0 Cytosol
GLC-D[e]	D-Glucose (extracellular)	C6H12O6	0 Extracellular
GLCNT	D-Gluconate	C6H11O7	-1 Cytosol
GLCN-D[e]	D-Gluconate (extracellular)	C6H11O7	-1 Extracellular
GLCR	D-Glucarate	C6H8O8	-2 Cytosol
GLCR[e]	D-Glucarate (extracellular)	C6H8O8	-2 Extracellular
GLCUR	D-Glucuronate	C6H9O7	-1 Cytosol
GLCUR[e]	D-Glucuronate (extracellular)	C6H9O7	-1 Extracellular
GLCURN	D-Glucurone	C6H8O6	0 Cytosol
GLN-L	L-Glutamine	C5H10N2O3	0 Cytosol
GLN-L[e]	L-Glutamine (extracellular)	C5H10N2O3	0 Extracellular
GLU1SA	L-Glutamate 1-semialdehyde	C5H9NO3	0 Cytosol
GLU5P	L-Glutamate 5-phosphate	C5H8NO7P	-2 Cytosol
GLU5SA	L-Glutamate 5-semialdehyde	C5H9NO3	0 Cytosol
GLU-D	D-Glutamate	C5H8NO4	-1 Cytosol
GLU-D[e]	D-Glutamate (extracellular)	C5H8NO4	-1 Extracellular
GLU-L	L-Glutamate	C5H8NO4	-1 Cytosol
GLU-L[e]	L-Glutamate (extracellular)	C5H8NO4	-1 Extracellular
GLUTRNA	L-Glutamyl-tRNA(Glu)	C5H8NO4X	0 Cytosol
GLX	Glyoxylate	C2H1O3	-1 Cytosol
GLX[e]	Glyoxylate (extracellular)	C2H1O3	-1 Extracellular
GLY	Glycine	C2H5NO2	0 Cytosol
GLY[e]	Glycine (extracellular)	C2H5NO2	0 Extracellular
GLYALD	D-Glyceraldehyde	C3H6O3	0 Cytosol
GLY-ASN-L	gly-asn-L	C6H11N3O4	0 Cytosol
GLY-ASN-L[e]	gly-asn-L (extracellular)	C6H11N3O4	0 Extracellular
GLY-ASP-L	gly-asp-L	C6H9N2O5	-1 Cytosol
GLY-ASP-L[e]	gly-asp-L (extracellular)	C6H9N2O5	-1 Extracellular
GLYB	Glycine betaine	C5H11NO2	0 Cytosol
GLYB[e]	Glycine betaine (extracellular)	C5H11NO2	0 Extracellular
GLYC[c]	Glycerol	C3H8O3	0 Cytosol
GLYC[e]	Glycerol (extracellular)	C3H8O3	0 Extracellular
GLYC3P[c]	sn-Glycerol 3-phosphate	C3H7O6P	-2 Cytosol
GLYC3P[e]	sn-Glycerol 3-phosphate (extracellular)	C3H7O6P	-2 Extracellular
GLYCLT	Glycolate	C2H3O3	-1 Cytosol
GLYCLT[e]	Glycolate (extracellular)	C2H3O3	-1 Extracellular
GLYCOGEN	glycogen	C6H10O5	0 Cytosol
GLYCOGEN[e]	Glycogen (extracellular)	C6H10O5	0 Extracellular
GLYC-R	(R)-Glycerate	C3H5O4	-1 Cytosol
GLY-CYS-L	Gly-Cys	C5H10N2O3S	0 Cytosol
GLY-GLN-L	Gly-Gln	C7H13N3O4	0 Cytosol
GLY-GLN-L[e]	Gly-Gln (extracellular)	C7H13N3O4	0 Extracellular
GLY-GLU-L	gly-glu-L	C7H11N2O5	-1 Cytosol
GLY-GLU-L[e]	gly-glu-L (extracellular)	C7H11N2O5	-1 Extracellular
GLYGLY	Glycylglycine	C4H8N2O3	0 Cytosol
GLY-LEU-L	Gly-Leu	C8H16N2O3	0 Cytosol
GLY-MET-L	Gly-Met	C7H14N2O3S	0 Cytosol
GLY-MET-L[e]	Gly-Met (extracellular)	C7H14N2O3S	0 Extracellular
GLY-PHE-L	Gly-Phe	C11H14N2O3	0 Cytosol
GLY-PRO-L	gly-pro-L	C7H12N2O3	0 Cytosol
GLY-PRO-L[e]	gly-pro-L (extracellular)	C7H12N2O3	0 Extracellular
GLY-TYR-L	Gly-Try	C11H14N2O4	0 Cytosol
GMP	GMP	C10H12N5O8P	-2 Cytosol
GMP[e]	GMP (extracellular)	C10H12N5O8P	-2 Extracellular
GRDP	Geranyl diphosphate	C10H17O7P2	-3 Cytosol
GSN	Guanosine	C10H13N5O5	0 Cytosol
GSN[e]	Guanosine (extracellular)	C10H13N5O5	0 Extracellular
GTCA1-45_BS	glycerol teichoic acid (n=45), unlinked, unsubstituted	C151H297N2O238P46	-45 Cytosol
GTCA2-45_BS	glycerol teichoic acid (n=45), unlinked, D-ala substituted	C286H612N47O328P46	-45 Cytosol
GTCA3-45_BS	glycerol teichoic acid (n=45), unlinked, glucose substitut	C421H749N2O464P46	-45 Cytosol
GTHOX[e]	Oxidized glutathione (extracellular)	C20H30N6O12S2	-2 Extracellular

GTHRD[e]	Reduced glutathione (extracellular)	C10H16N3O6S	-1 Extracellular
GTP	GTP	C10H12N5O14P3	-4 Cytosol
GUA	Guanine	C5H5N5O	0 Cytosol
GUA[e]	Guanine (extracellular)	C5H5N5O	0 Extracellular
H	H+	H	1 Cytosol
H[e]	H+ (extracellular)	H	1 Extracellular
H2MB4P	1-hydroxy-2-methyl-2-(E)-butenyl 4-diphosphate	C5H9O8P2	-3 Cytosol
H2O	H2O	H2O	0 Cytosol
H2O[e]	H2O (extracellular)	H2O	0 Extracellular
H2O2	Hydrogen peroxide	H2O2	0 Cytosol
H2O2[e]	Hydrogen peroxide (extracellular)	H2O2	0 Extracellular
H2S	Hydrogen sulfide	HS	-1 Cytosol
HCO3	Bicarbonate	CHO3	-1 Cytosol
HCYS-L	L-Homocysteine	C4H9NO2S	0 Cytosol
HDCA	hexadecanoate (n-C16:0)	C16H31O2	-1 Cytosol
HDCEA[c]	hexadecenoate (n-C16:1)	C16H29O2	-1 Cytosol
HDCOA[c]	Hexadecenoyl-CoA (n-C16:1CoA)	C37H60N7O17P3S	-4 Cytosol
HDD2COA[c]	trans-Hexadec-2-enoyl-CoA	C37H60N7O17P3S	-4 Cytosol
HEMEA	Heme A	C49H54FeN4O6	-6 Cytosol
HEMEC	Heme C	C40H42FeN6O8S2	-4 Cytosol
HEMED	Heme D	C34H30FeN4O6	-6 Cytosol
HEMEO	Heme O	C49H56FeN4O5	-2 Cytosol
HEPDP	all-trans-Heptaprenyl diphosphate	C35H57O7P2	-3 Cytosol
HEXDP[c]	all-trans-Hexaprenyl diphosphate	C30H49O7P2	-3 Cytosol
HEXS	hexanesulfonate	C6H13O3S	-1 Cytosol
HEXS[e]	hexanesulfonate (extracellular)	C6H13O3S	-1 Extracellular
HG2	Mercury (charged +2)	Hg	2 Cytosol
HG2[e]	Mercury (charged +2) (extracellular)	Hg	2 Extracellular
HIBCOA[c]	(S)-3-Hydroxyisobutyryl-CoA	C25H39N7O18P3S	-3 Cytosol
HIS-L	L-Histidine	C6H9N3O2	0 Cytosol
HIS-L[e]	L-Histidine (extracellular)	C6H9N3O2	0 Extracellular
HISP	L-Histidinol phosphate	C6H11N3O4P	-1 Cytosol
HISTD	L-Histidinol	C6H12N3O	1 Cytosol
HMBIL	Hydroxymethylbilane	C40H38N4O17	-8 Cytosol
HMGCOA[c]	Hydroxymethylglutaryl-CoA	C27H39N7O20P3S	-5 Cytosol
HOM-L	L-Homoserine	C4H9NO3	0 Cytosol
HPA	heptanoate	C7H13O2	-1 Cytosol
HPAL	heptanal	C7H14O	0 Cytosol
HPDCA	heptadecanoate (C17:0)	C17H33O2	-1 Cytosol
HPDCAL	heptadecanal	C17H34O	0 Cytosol
HQN	Hydroquinone	C6H6O2	0 Cytosol
HQN[e]	Hydroquinone (extracellular)	C6H6O2	0 Extracellular
HX2COA[c]	trans-Hex-2-enoyl-CoA	C27H40N7O17P3S	-4 Cytosol
HXA	Hexanoate	C6H11O2	-1 Cytosol
HXAL	hexanal	C6H12O	0 Cytosol
HXAN	Hypoxanthine	C5H4N4O	0 Cytosol
HXAN[e]	Hypoxanthine (extracellular)	C5H4N4O	0 Extracellular
HXCOA[c]	Hexanoyl-CoA	C27H42N7O17P3S	-4 Cytosol
HXDCAL	Hexadecanal	C16H32O	0 Cytosol
IASP	Iminoaspartate	C4H3NO4	-2 Cytosol
IBCOA	Isobutyryl-CoA	C25H38N7O17P3S	-4 Cytosol
ICHOR	Isochorismate	C10H8O6	-2 Cytosol
ICIT	Isocitrate	C6H5O7	-3 Cytosol
ICIT[e]	Isocitrate (extracellular)	C6H5O7	-3 Extracellular
IDP	IDP	C10H11N4O11P2	-3 Cytosol
ILE-L	L-Isoleucine	C6H13NO2	0 Cytosol
ILE-L[e]	L-Isoleucine (extracellular)	C6H13NO2	0 Extracellular
IMACP	3-(Imidazol-4-yl)-2-oxopropyl phosphate	C6H8N2O5P	-1 Cytosol
IMP	IMP	C10H11N4O8P	-2 Cytosol
IMZAC	Imidazole-4-acetate	C5H6N2O2	0 Cytosol
IMZACD	Imidazole-4-acetaldehyde	C5H7N2O	1 Cytosol
INOSHP	myo-Inositol hexakisphosphate	C6H6O24P6	-12 Cytosol
INOSPP1	1D-myo-inositol 1,3,4,5,6-pentakisphosphate	C6H7O21P5	-10 Cytosol

INOST	myo-Inositol	C6H12O6	0 Cytosol
INOST[e]	myo-Inositol (extracellular)	C6H12O6	0 Extracellular
INS	Inosine	C10H12N4O5	0 Cytosol
INS[e]	Inosine (extracellular)	C10H12N4O5	0 Extracellular
IPDP[c]	Isopentenyl diphosphate	C5H9O7P2	-3 Cytosol
ISOMAL	Isomaltose	C12H22O11	0 Cytosol
ISTNT	Isethionate	C2H5O4S	-1 Cytosol
ISTNT[e]	Isethionate (extracellular)	C2H5O4S	-1 Extracellular
ITP	ITP	C10H11N4O14P3	-4 Cytosol
IVCOA[c]	Isovaleryl-CoA	C26H40N7O17P3S	-4 Cytosol
K	K+	K	1 Cytosol
K[e]	K+ (extracellular)	K	1 Extracellular
LAC-L	L-Lactate	C3H5O3	-1 Cytosol
LAC-L[e]	L-Lactate (extracellular)	C3H5O3	-1 Extracellular
L-ALAGLY	L-alanylglycine	C5H10N2O3	0 Cytosol
L-ALAGLY[e]	L-alanylglycine (extracellular)	C5H10N2O3	0 Extracellular
LALD-L	L-Lactaldehyde	C3H6O2	0 Cytosol
LANTH	Lanthionine	C6H12N2O4S	0 Cytosol
LANTH[e]	Lanthionine (extracellular)	C6H12N2O4S	0 Extracellular
LARAB[e]	alpha-L-Arabinan (extracellular)	C15H24O12	0 Extracellular
LCTS	Lactose	C12H22O11	0 Cytosol
LCTS[e]	Lactose (extracellular)	C12H22O11	0 Extracellular
LCYST	L-Cysteate	C3H6NO5S	-1 Cytosol
LCYST[e]	L-Cysteate (extracellular)	C3H6NO5S	-1 Extracellular
LEU-L	L-Leucine	C6H13NO2	0 Cytosol
LEU-L[e]	L-Leucine (extracellular)	C6H13NO2	0 Extracellular
LGLYALD	L-Glyceraldehyde	C3H6O3	0 Cytosol
LIPO1-24_BS	lipoteichoic acid (n=24), linked, glucose substituted	C26236H47072O25500P2400	-2400 Cytosol
LIPO2-24_BS	lipoteichoic acid (n=24), linked, N-acetyl-D-glucosamine	C31036H54272N2400O25500P24	-2400 Cytosol
LIPO3-24_BS	lipoteichoic acid (n=24), linked, D-alanine substituted	C19036H39872N2400O18300P24	-2400 Cytosol
LIPO4-24_BS	lipoteichoic acid (n=24), linked, unsubstituted	C11836H23072O13500P2400	-2400 Cytosol
LIPT	Lipoate	C8H13O2S2	-1 Cytosol
LIPT[e]	Lipoate (extracellular)	C8H13O2S2	-1 Extracellular
L-SERGLY	L-Serylglycine	C5H10N2O4	0 Cytosol
L-THRGLY	Thr-Gly	C6H12N2O4	0 Cytosol
LYS-L[c]	L-Lysine	C6H15N2O2	1 Cytosol
LYS-L[e]	L-Lysine (extracellular)	C6H15N2O2	1 Extracellular
LYSYLPGLY_BS[c]	lysylphosphatidylglycerol	C4336H8572N200O1100P100	0 Cytosol
M12DG_BS	monoglucosyl-1,2 diacylglycerol	C4036H7672O1000	0 Cytosol
MADG[e]	alpha-Methyl-D-glucoside (extracellular)	C7H14O6	0 Extracellular
MALCOA	Malonyl-CoA	C24H33N7O19P3S	-5 Cytosol
MAL-D	D-Malate	C4H4O5	-2 Cytosol
MAL-D[e]	D-Malate (extracellular)	C4H4O5	-2 Extracellular
MAL-L	L-Malate	C4H4O5	-2 Cytosol
MAL-L[e]	L-Malate (extracellular)	C4H4O5	-2 Extracellular
MALT	Maltose	C12H22O11	0 Cytosol
MALT[e]	Maltose (extracellular)	C12H22O11	0 Extracellular
MALT6P	Maltose 6'-phosphate	C12H21O14P	-2 Cytosol
MALTHP	Maltoheptaose	C42H72O36	0 Cytosol
MALTHX	Maltohexaose	C36H62O31	0 Cytosol
MALTPT	Maltopentaose	C30H52O26	0 Cytosol
MALTTR	Maltotriose	C18H32O16	0 Cytosol
MALTTR[e]	Maltotriose (extracellular)	C18H32O16	0 Extracellular
MALTTRTTR	Maltotetraose	C24H42O21	0 Cytosol
MAN	D-Mannose	C6H12O6	0 Cytosol
MAN[e]	D-Mannose (extracellular)	C6H12O6	0 Extracellular
MAN1P	D-Mannose 1-phosphate	C6H11O9P	-2 Cytosol
MAN1P[e]	D-Mannose 1-phosphate (extracellular)	C6H11O9P	-2 Extracellular
MAN6P	D-Mannose 6-phosphate	C6H11O9P	-2 Cytosol
MAN6P[e]	D-Mannose 6-phosphate (extracellular)	C6H11O9P	-2 Extracellular
MANA	D-Mannonate	C6H11O7	-1 Cytosol
MBDG[e]	beta-Methylglucoside (extracellular)	C7H14O6	0 Extracellular
MELIB	Melibiose	C12H22O11	0 Cytosol

MELIB[e]	Melibiose (extracellular)	C12H22O11	0 Extracellular
MEOH[e]	Methanol (extracellular)	CH4O	0 Extracellular
MET-D	D-Methionine	C5H11NO2S	0 Cytosol
MET-D[e]	D-Methionine (extracellular)	C5H11NO2S	0 Extracellular
METHF	5,10-Methylenetetrahydrofolate	C20H20N7O6	-1 Cytosol
MET-L	L-Methionine	C5H11NO2S	0 Cytosol
MET-L[e]	L-Methionine (extracellular)	C5H11NO2S	0 Extracellular
MET-L-ALA-L	met-L-ala-L	C8H16N2O3S	0 Cytosol
MET-L-ALA-L[e]	met-L-ala-L (extracellular)	C8H16N2O3S	0 Extracellular
MET-L-HIS-L	Met-His	C11H18N4O3S	0 Cytosol
MET-L-MET-L	Met-Met	C10H20N2O3S2	0 Cytosol
MET-L-PHE-L	Met-Phe	C14H20N2O3S	0 Cytosol
MET-L-TYR-L	Met-Tyr	C14H20N2O4S	0 Cytosol
METOX	L-Methionine S-oxide	C5H11NO3S	0 Cytosol
METOX[e]	L-Methionine S-oxide (extracellular)	C5H11NO3S	0 Extracellular
METOX-R	L-methionine R-oxide	C5H11NO3S	0 Cytosol
METOX-R[e]	L-methionine R-oxide (extracellular)	C5H11NO3S	0 Extracellular
METTRNA	L-Methionyl-tRNA (Met)	C5H11NO2SX	1 Cytosol
MG2	Mg	Mg	2 Cytosol
MG2[e]	Mg (extracellular)	Mg	2 Extracellular
MI1P-D	1D-myo-Inositol 1-phosphate	C6H11O9P	-2 Cytosol
MICIT	Methylisocitrate	C7H7O7	-3 Cytosol
MLTHF	5,10-Methylenetetrahydrofolate	C20H21N7O6	-2 Cytosol
MMAL	Methylmalonate	C4H4O4	-2 Cytosol
MMALSA[c]	(S)-Methylmalonate semialdehyde	C4H5O3	-1 Cytosol
MMCOA-S	(S)-Methylmalonyl-CoA	C25H35N7O19P3S	-5 Cytosol
MN2	Mn2+	Mn	2 Cytosol
MN2[e]	Mn2+ (extracellular)	Mn	2 Extracellular
MNL[e]	D-Mannitol (extracellular)	C6H14O6	0 Extracellular
MNL1P	D-Mannitol 1-phosphate	C6H13O9P	-2 Cytosol
MOBD	Molybdate	MoO4	-2 Cytosol
MOBD[e]	Molybdate (extracellular)	MoO4	-2 Extracellular
MOPS	MOPS	C7H14NO4S	-1 Cytosol
MOPS[e]	MOPS (extracellular)	C7H14NO4S	-1 Extracellular
MQL7	Menaquinol 7	C46H66O2	0 Cytosol
MQN7	Menaquinone 7	C46H64O2	0 Cytosol
MSA	Malonate semialdehyde	C3H3O3	-1 Cytosol
MSO3	Methanesulfonate	CH3O3S	-1 Cytosol
MSO3[e]	Methanesulfonate (extracellular)	CH3O3S	-1 Extracellular
MTHGXL	Methylglyoxal	C3H4O2	0 Cytosol
N1ASPM	N1-Acetylspermidine	C9H23N3O	2 Cytosol
NA1	Sodium	Na	1 Cytosol
NA1[e]	Sodium (extracellular)	Na	1 Extracellular
NAC	Nicotinate	C6H4NO2	-1 Cytosol
NAC[e]	Nicotinate (extracellular)	C6H4NO2	-1 Extracellular
NAD	Nicotinamide adenine dinucleotide	C21H26N7O14P2	-1 Cytosol
NADH	Nicotinamide adenine dinucleotide - reduced	C21H27N7O14P2	-2 Cytosol
NADP	Nicotinamide adenine dinucleotide phosphate	C21H25N7O17P3	-3 Cytosol
NADPH	Nicotinamide adenine dinucleotide phosphate - reduced	C21H26N7O17P3	-4 Cytosol
NCAM	Nicotinamide	C6H6N2O	0 Cytosol
NEBARI	Nebularine	C10H12N4O4	0 Cytosol
NH4[c]	Ammonium	H4N	1 Cytosol
NH4[e]	Ammonium (extracellular)	H4N	1 Extracellular
NI2	Ni2+	Ni	2 Cytosol
NI2[e]	Ni2+ (extracellular)	Ni	2 Extracellular
NICRNT	Nicotinate D-ribonucleotide	C11H12NO9P	-2 Cytosol
NMN	NMN	C11H14N2O8P	-1 Cytosol
NO2	Nitrite	NO2	-1 Cytosol
NO2[e]	Nitrite (extracellular)	NO2	-1 Extracellular
NO3	Nitrate	NO3	-1 Cytosol
NO3[e]	Nitrate (extracellular)	NO3	-1 Extracellular
NONA	Nonanoate	C9H17O2	-1 Cytosol
NONAL	nonanal	C9H18O	0 Cytosol

O2	O2	O2	0 Cytosol
O2-	Superoxide	O2	-1 Cytosol
O2[e]	O2 (extracellular)	O2	0 Extracellular
OAA	Oxaloacetate	C4H2O5	-2 Cytosol
OC2COA[c]	trans-Oct-2-enoyl-CoA	C29H44N7O17P3S	-4 Cytosol
OC2COA[c]	Octanoyl-CoA	C29H46N7O17P3S	-4 Cytosol
OCDCA[c]	octadecanoate (n-C18:0)	C18H35O2	-1 Cytosol
OCDCAL	octadecanal	C18H36O	0 Cytosol
OCDCEA[c]	octadecenoate (n-C18:1)	C18H33O2	-1 Cytosol
OCTA	octanoate	C8H15O2	-1 Cytosol
OCTAL	octanal	C8H16O	0 Cytosol
ODECOA[c]	Octadecenoyl-CoA (n-C18:1CoA)	C39H64N7O17P3S	-4 Cytosol
ORN-L	L-Ornithine	C5H13N2O2	1 Cytosol
ORN-L[e]	L-Ornithine (extracellular)	C5H13N2O2	1 Extracellular
OROT	Orotate	C5H3N2O4	-1 Cytosol
OROT5P	Orotidine 5'-phosphate	C10H10N2O11P	-3 Cytosol
OXA	Oxalate	C2O4	-2 Cytosol
OXGLYC	Oxaloglycolate	C4H2O6	-2 Cytosol
PALA	Palatinose	C12H22O11	0 Cytosol
PALA[e]	Palatinose (extracellular)	C12H22O11	0 Extracellular
PAN4P[c]	Pantetheine 4'-phosphate	C11H21N2O7PS	-2 Cytosol
PANT-R	(R)-Pantoate	C6H11O4	-1 Cytosol
PAP	Adenosine 3',5'-bisphosphate	C10H11N5O10P2	-4 Cytosol
PAPS	3'-Phosphoadenylyl sulfate	C10H11N5O13P2S	-4 Cytosol
PENCIL	Penicillin	C9H11N2O4S	-1 Cytosol
PENCILCA	Penicilloic acid	C9H12N2O5S	-2 Cytosol
PENDP[c]	all-trans-Pentaprenyl diphosphate	C25H41O7P2	-3 Cytosol
PEP	Phosphoenolpyruvate	C3H2O6P	-3 Cytosol
PEP[e]	Phosphoenolpyruvate (extracellular)	C3H2O6P	-3 Extracellular
PEPTIDO_BS	Peptidoglycan subunit of Bacillus subtilis	C40H62N8O21	-2 Cytosol
PGLY_BS[c]	phosphatidylglycerol (B. subtilis)	C3736H7272O1000P100	-100 Cytosol
PGLYP_BS[c]	phosphatidylglycerophosphate (B. subtilis)	C3736H7172O1300P200	-300 Cytosol
PHE-L	L-Phenylalanine	C9H11NO2	0 Cytosol
PHE-L[e]	L-Phenylalanine (extracellular)	C9H11NO2	0 Extracellular
PHEME	Protoheme	C34H31FeN4O4	-1 Cytosol
PHOM	O-Phospho-L-homoserine	C4H8NO6P	-2 Cytosol
PHPYR	Phenylpyruvate	C9H7O3	-1 Cytosol
PI	Phosphate	HO4P	-2 Cytosol
PI[e]	Phosphate (extracellular)	HO4P	-2 Extracellular
PIME	Pimelate	C7H10O4	-2 Cytosol
PMCOA	Pimeloyl-CoA	C28H41N7O19P3S	-5 Cytosol
PMTCOA	Palmitoyl-CoA (n-C16:0CoA)	C37H62N7O17P3S	-4 Cytosol
PNTOR	(R)-Pantothenate	C9H16NO5	-1 Cytosol
PNTOR[e]	(R)-Pantothenate (extracellular)	C9H16NO5	-1 Extracellular
PPA	Propionate	C3H5O2	-1 Cytosol
PPA[e]	Propionate (extracellular)	C3H5O2	-1 Extracellular
PPAL	Propanal	C3H6O	0 Cytosol
PPAP	Propanoyl phosphate	C3H5O5P	-2 Cytosol
PPBNG	Porphobilinogen	C10H13N2O4	-1 Cytosol
PPCOA[c]	Propanoyl-CoA	C24H36N7O17P3S	-4 Cytosol
PPHN	Prephenate	C10H8O6	-2 Cytosol
PPI	Diphosphate	HO7P2	-3 Cytosol
PPI[e]	Diphosphate (extracellular)	HO7P2	-3 Extracellular
PPP9	Protoporphyrin	C34H32N4O4	-2 Cytosol
PPPG9	Protoporphyrinogen IX	C34H38N4O4	-2 Cytosol
PPPI	Inorganic triphosphate	HO10P3	-4 Cytosol
PRAM	5-Phospho-beta-D-ribosylamine	C5H11NO7P	-1 Cytosol
PRAN	N-(5-Phospho-D-ribosyl)anthranilate	C12H13NO9P	-3 Cytosol
PRBAMP	1-(5-Phosphoribosyl)-AMP	C15H19N5O14P2	-4 Cytosol
PRBATP	1-(5-Phosphoribosyl)-ATP	C15H19N5O20P4	-6 Cytosol
PRFP	1-(5-Phosphoribosyl)-5-[(5-phosphoribosylamino)methyl	C15H22N5O15P2	-3 Cytosol
PRLP	5-[(5-phospho-1-deoxyribulos-1-ylamino)methylideneam	C15H22N5O15P2	-3 Cytosol
PRO-L	L-Proline	C5H9NO2	0 Cytosol

PRO-L[e]	L-Proline (extracellular)	C5H9NO2	0 Extracellular
PROLB	proline betaine	C7H13NO2	0 Cytosol
PROLB[e]	proline betaine (extracellular)	C7H13NO2	0 Extracellular
PRPP	5-Phospho-alpha-D-ribose 1-diphosphate	C5H8O14P3	-5 Cytosol
PS_BS[c]	phosphatidylserine (B. subtilis)	C3736H7172N100O1000P100	-100 Cytosol
PSER-D	D-O-Phosphoserine	C3H6NO6P	-2 Cytosol
PSER-D[e]	D-O-Phosphoserine (extracellular)	C3H6NO6P	-2 Extracellular
PSER-L	O-Phospho-L-serine	C3H6NO6P	-2 Cytosol
PSER-L[e]	O-Phospho-L-serine (extracellular)	C3H6NO6P	-2 Extracellular
PSETHA_BS[c]	phosphatidylethanolamine (B. subtilis)	C3636H7172N100O800P100	-100 Cytosol
PTA	Pentanoate	C5H9O2	-1 Cytosol
PTAL	pentanal	C5H10O	0 Cytosol
PTDCA	pentadecanoate (C15:0)	C15H29O2	-1 Cytosol
PTDCAL	pentadecanal	C15H30O	0 Cytosol
PTRC	Putrescine	C4H14N2	2 Cytosol
PTTH	Pantetheine	C11H22N2O4S	0 Cytosol
PUR	Puromycin	C22H30N7O5	1 Cytosol
PUR[e]	Puromycin (extracellular)	C22H30N7O5	1 Extracellular
PURINE	Purine	C5H5N4	1 Cytosol
PYDX5P	Pyridoxal 5'-phosphate	C8H7NO6P	-3 Cytosol
PYR	Pyruvate	C3H3O3	-1 Cytosol
PYR[e]	Pyruvate (extracellular)	C3H3O3	-1 Extracellular
QUC	Quercetin	C15H7O7	-3 Cytosol
QULN	Quinolate	C7H3NO4	-2 Cytosol
R1P	alpha-D-Ribose 1-phosphate	C5H9O8P	-2 Cytosol
R5P	alpha-D-Ribose 5-phosphate	C5H9O8P	-2 Cytosol
RAFFIN	Raffinose	C18H32O16	0 Cytosol
RAFFIN[e]	Raffinose (extracellular)	C18H32O16	0 Extracellular
RBL-D	D-Ribulose	C5H10O5	0 Cytosol
RBL-L	L-Ribulose	C5H10O5	0 Cytosol
RHCYS	S-Ribosyl-L-homocysteine	C9H17NO6S	0 Cytosol
RIB-D	D-Ribose	C5H10O5	0 Cytosol
RIB-D[e]	D-Ribose (extracellular)	C5H10O5	0 Extracellular
RIBFLV	Riboflavin	C17H20N4O6	0 Cytosol
RIBFLV[e]	Riboflavin (extracellular)	C17H20N4O6	0 Extracellular
RIBFLVRD	Reduced riboflavin	C17H22N4O6	0 Cytosol
RML	L-Rhamnulose	C6H12O5	0 Cytosol
RML1P	L-Rhamnulose 1-phosphate	C6H11O8P	-2 Cytosol
RMN	L-Rhamnose	C6H12O5	0 Cytosol
RMN[e]	L-Rhamnose (extracellular)	C6H12O5	0 Extracellular
RNAM	N-Ribosylnicotinamide	C11H15N2O5	1 Cytosol
RU5P-D	D-Ribulose 5-phosphate	C5H9O8P	-2 Cytosol
RU5P-L	L-Ribulose 5-phosphate	C5H9O8P	-2 Cytosol
S	Sulfur	S	0 Cytosol
S7P	Sedoheptulose 7-phosphate	C7H13O10P	-2 Cytosol
SALC6P	Salicin 6-phosphate	C13H17O10P	-2 Cytosol
SALCN[e]	Salicin (extracellular)	C13H18O7	0 Extracellular
SARCS	Sarcosine	C3H7NO2	0 Cytosol
SBT-D	D-Sorbitol	C6H14O6	0 Cytosol
SBT-D[e]	D-Sorbitol (extracellular)	C6H14O6	0 Extracellular
SBZCOA	O-Succinylbenzoyl-CoA	C32H39N7O20P3S	-5 Cytosol
SCYS-L	L-Selenocysteine	C3H7NO2Se	0 Cytosol
SELN	Selenide	HSe	-1 Cytosol
SER-D	D-Serine	C3H7NO3	0 Cytosol
SER-D[e]	D-Serine (extracellular)	C3H7NO3	0 Extracellular
SER-L[c]	L-Serine	C3H7NO3	0 Cytosol
SER-L[e]	L-Serine (extracellular)	C3H7NO3	0 Extracellular
SER-L-ALA-L	Ser-Ala	C6H12N2O4	0 Cytosol
SER-L-GLN-L	Ser-Gln	C8H15N3O5	0 Cytosol
SER-L-HIS-L	Ser-His	C9H14N4O4	0 Cytosol
SER-L-ILE-L	Ser-Ile	C9H18N2O4	0 Cytosol
SER-L-LEU-L	Ser-Leu	C9H18N2O4	0 Cytosol
SER-L-MET-L	Ser-Met	C8H16N2O4S	0 Cytosol

SER-L-PHE-L	Ser-Phe	C12H16N2O4	0 Cytosol
SER-L-SER-L	Ser-Ser	C6H12N2O5	0 Cytosol
SER-L-TRP-L	Ser-Trp	C14H17N3O4	0 Cytosol
SER-L-TYR-L	Ser-Tyr	C12H16N2O5	0 Cytosol
SER-L-VAL-L	Ser-Val	C8H16N2O4	0 Cytosol
SHCL	dihydrosirohydrochlorin	C42H41N4O16	-7 Cytosol
SHEME	Siroheme	C42H36FeN4O16	-8 Cytosol
SKM	Shikimate	C7H9O5	-1 Cytosol
SKM5P	Shikimate 5-phosphate	C7H8O8P	-3 Cytosol
SL26DA	N-Succinyl-L-L-2,6-diaminoheptanedioate	C11H16N2O7	-2 Cytosol
SLCYS	S-Sulfo-L-cysteine	C3H6NO5S2	-1 Cytosol
SO3	Sulfite	O3S	-2 Cytosol
SO4	Sulfate	O4S	-2 Cytosol
SO4[e]	Sulfate (extracellular)	O4S	-2 Extracellular
SPMD	Spermidine	C7H22N3	3 Cytosol
SPMD[e]	Spermidine (extracellular)	C7H22N3	3 Extracellular
SPRM	Spermine	C10H30N4	4 Cytosol
SRB-L	L-Sorbose	C6H12O6	0 Cytosol
SRB-L[e]	L-Sorbose (extracellular)	C6H12O6	0 Extracellular
SRCH	sirohydrochlorin	C42H38N4O16	-8 Cytosol
STARCH[e]	Starch (extracellular)	C12H20O10	0 Extracellular
STCHS	Stachyose	C24H42O21	0 Cytosol
STRCOA[c]	Stearyl-CoA (n-C18:0CoA)	C39H66N7O17P3S	-4 Cytosol
SUC6P	Sucrose 6-phosphate	C12H21O14P	-2 Cytosol
SUCBZ	o-Succinylbenzoate	C11H8O5	-2 Cytosol
SUCC	Succinate	C4H4O4	-2 Cytosol
SUCC[e]	Succinate (extracellular)	C4H4O4	-2 Extracellular
SUCCOA	Succinyl-CoA	C25H35N7O19P3S	-5 Cytosol
SUCHMS	O-Succinyl-L-homoserine	C8H12NO6	-1 Cytosol
SUCR	Sucrose	C12H22O11	0 Cytosol
SUCR[e]	Sucrose (extracellular)	C12H22O11	0 Extracellular
SUCSAL	Succinic semialdehyde	C4H5O3	-1 Cytosol
SULA	Sulfoacetate	C2H2O5S	-2 Cytosol
SULA[e]	Sulfoacetate (extracellular)	C2H2O5S	-2 Extracellular
T12DG_BS[c]	triglucoyl-1,2 diacylglycerol	C5236H9672O2000	0 Cytosol
TAG6P-D	D-Tagatose 6-phosphate	C6H11O9P	-2 Cytosol
TAGDP-D	D-Tagatose 1,6-biphosphate	C6H10O12P2	-4 Cytosol
TAGUR	D-Tagaturonate	C6H9O7	-1 Cytosol
TARTR-L	L-tartarate	C4H4O6	-2 Cytosol
TARTR-M	meso-Tartaric acid	C4H4O6	-2 Cytosol
TAUR	Taurine	C2H6NO3S	-1 Cytosol
TAUR[e]	Taurine (extracellular)	C2H6NO3S	-1 Extracellular
TCAM_BS	minor teichoic acid (acetylgalactosamine glucose phosph	C420H750N30O420P30	-30 Cytosol
TCGGRPP[c]	trans,trans,cis-Geranylgeranyl pyrophosphate	C20H33O7P2	-3 Cytosol
TD2COA[c]	trans-Tetradec-2-enoyl-CoA	C35H56N7O17P3S	-4 Cytosol
TDCOA	Tetradecanoyl-CoA (n-C14:0CoA)	C35H58N7O17P3S	-4 Cytosol
TEICH-45_BS	teichuronic acid (GlcA + GalNac, 45 repeating unit)	C630H945N45O630P45	-45 Cytosol
THDP	2,3,4,5-Tetrahydrodipicolinate	C7H7NO4	-2 Cytosol
THF	5,6,7,8-Tetrahydrofolate	C19H21N7O6	-2 Cytosol
THIOG	Thioglycolate	C2H3O2S	-1 Cytosol
THIOG[e]	Thioglycolate (extracellular)	C2H3O2S	-1 Extracellular
THM	Thiamin	C12H17N4OS	1 Cytosol
THMMP	Thiamin monophosphate	C12H16N4O4PS	-1 Cytosol
THMPP	Thiamine diphosphate	C12H16N4O7P2S	-2 Cytosol
THR-L	L-Threonine	C4H9NO3	0 Cytosol
THR-L[e]	L-Threonine (extracellular)	C4H9NO3	0 Extracellular
THR-L-GLN-L	Thr-Gln	C9H17N3O5	0 Cytosol
THR-L-LEU-L	Thr-Leu	C10H20N2O4	0 Cytosol
THR-L-MET-L	Thr-Met	C9H18N2O4S	0 Cytosol
THR-L-PHE-L	Thr-Phe	C13H18N2O4	0 Cytosol
THR-L-THR-L	Thr-Thr	C8H16N2O5	0 Cytosol
THYM	Thymine	C5H6N2O2	0 Cytosol
THYM[e]	Thymine (extracellular)	C5H6N2O2	0 Extracellular

THYMD	Thymidine	C10H14N2O5	0 Cytosol
THYMD[e]	Thymidine (extracellular)	C10H14N2O5	0 Extracellular
TMP	Trimetaphosphate	P3O9	-3 Cytosol
TMP[e]	Trimetaphosphate (extracellular)	P3O9	-3 Extracellular
TRANS-DD2COA[c]	trans-Dodec-2-enoyl-CoA	C33H52N7O17P3S	-4 Cytosol
TRDCA	Tridecanoate	C13H25O2	-1 Cytosol
TRDCAL	Tridecanal	C13H26O	0 Cytosol
TRDOX	Oxidized thioredoxin	X	0 Cytosol
TRDRD[c]	Reduced thioredoxin	XH2	0 Cytosol
TRE[e]	Trehalose	C12H22O11	0 Extracellular
TRE6P	alpha,alpha'-Trehalose 6-phosphate	C12H21O14P	-2 Cytosol
TRNAGLU	tRNA (Glu)	HOX	0 Cytosol
TRNAMET	tRNA(Met)	HOX	0 Cytosol
TRP-L	L-Tryptophan	C11H12N2O2	0 Cytosol
TRP-L[e]	L-Tryptophan (extracellular)	C11H12N2O2	0 Extracellular
TSUL	Thiosulfate	O3S2	-2 Cytosol
TTDCA	tetradecanoate (C14:0)	C14H27O2	-1 Cytosol
TTDCAL	tetradecanal	C14H28O	0 Cytosol
TYR-L	L-Tyrosine	C9H11NO3	0 Cytosol
TYR-L[e]	L-Tyrosine (extracellular)	C9H11NO3	0 Extracellular
UAAGMDA	Undecaprenyl-diphospho-N-acetylmuramoyl-(N-acetylglucosamine)-L-alanyl-D-glutamate	C95H152N8O28P2	-4 Cytosol
UACCG	UDP-N-acetyl-3-O-(1-carboxyvinyl)-D-glucosamine	C20H26N3O19P2	-3 Cytosol
UACGALA	UDP-N-acetyl-D-galactosamine	C17H25N3O17P2	-2 Cytosol
UACGAM	UDP-N-acetyl-D-glucosamine	C17H25N3O17P2	-2 Cytosol
UACMAM	UDP-N-acetyl-D-mannosamine	C17H25N3O17P2	-2 Cytosol
UAGMDA	Undecaprenyl-diphospho-N-acetylmuramoyl-L-alanyl-D-glutamate	C87H139N7O23P2	-4 Cytosol
UAMA	UDP-N-acetylmuramoyl-L-alanine	C23H33N4O20P2	-3 Cytosol
UAMAG	UDP-N-acetylmuramoyl-L-alanyl-D-glutamate	C28H39N5O23P2	-4 Cytosol
UAMR	UDP-N-acetylmuramate	C20H28N3O19P2	-3 Cytosol
UDCA	undecanoate	C11H21O2	-1 Cytosol
UDCAL	undecanal	C11H22O	0 Cytosol
UDCPDP	Undecaprenyl diphosphate	C55H89O7P2	-3 Cytosol
UDCPP	Undecaprenyl phosphate	C55H89O4P	-2 Cytosol
UDP	UDP	C9H11N2O12P2	-3 Cytosol
UDPG	UDPglucose	C15H22N2O17P2	-2 Cytosol
UDPGAL	UDPgalactose	C15H22N2O17P2	-2 Cytosol
UDPGLCUR	UDP-D-glucuronate	C15H19N2O18P2	-3 Cytosol
UGMD	UDP-N-acetylmuramoyl-L-alanyl-D-gamma-glutamyl-meso-2,6-diaminopimelate	C35H51N7O26P2	-4 Cytosol
UGMDA	UDP-N-acetylmuramoyl-L-alanyl-D-glutamyl-meso-2,6-diaminopimelate	C41H61N9O28P2	-4 Cytosol
UMP	UMP	C9H11N2O9P	-2 Cytosol
UMP[e]	UMP (extracellular)	C9H11N2O9P	-2 Extracellular
UNK2_BS	unknown 2	C5H17O11NP	-1 Cytosol
UPPG3	Uroporphyrinogen III	C40H36N4O16	-8 Cytosol
URA	Uracil	C4H4N2O2	0 Cytosol
URA[e]	Uracil (extracellular)	C4H4N2O2	0 Extracellular
URATE	Urate	C5H4N4O3	0 Cytosol
URATE[e]	Urate (extracellular)	C5H4N4O3	0 Extracellular
URCAN	Urocanate	C6H5N2O2	-1 Cytosol
URDGLYC	(-)-Ureidoglycolate	C3H5N2O4	-1 Cytosol
UREA	Urea	CH4N2O	0 Cytosol
UREA[e]	Urea (extracellular)	CH4N2O	0 Extracellular
URI	Uridine	C9H12N2O6	0 Cytosol
URI[e]	Uridine (extracellular)	C9H12N2O6	0 Extracellular
UTP	UTP	C9H11N2O15P3	-4 Cytosol
VAL-L	L-Valine	C5H11NO2	0 Cytosol
VAL-L[e]	L-Valine (extracellular)	C5H11NO2	0 Extracellular
XAN	Xanthine	C5H4N4O2	0 Cytosol
XAN[e]	Xanthine (extracellular)	C5H4N4O2	0 Extracellular
XMP	Xanthosine 5'-phosphate	C10H11N4O9P	-2 Cytosol
XTSN	Xanthosine	C10H12N4O6	0 Cytosol
XTSN[e]	Xanthosine (extracellular)	C10H12N4O6	0 Extracellular
XU5P-D	D-Xylulose 5-phosphate	C5H9O8P	-2 Cytosol
XYL-D	D-Xylose	C5H10O5	0 Cytosol

XYL-D[e]	D-Xylose (extracellular)	C5H10O5	0 Extracellular
XYLU-D	D-Xylulose	C5H10O5	0 Cytosol
ZN2	Zinc	Zn	2 Cytosol
ZN2[e]	Zinc (extracellular)	Zn	2 Extracellular
CYTHNE[c]	Cystathionine	C7H14N2O4S	0 cytosol
HCY[c]	hydrogen cyanide	CHN	0 Cytosol
2HYTHDIPH[c]	2-(alpha-Hydroxyethyl)thiamine diphosphate	C14H20N4O8P2S	-2 cytosol
CARHYTH[c]	3-Carboxy-1-hydroxypropyl-ThPP	C16H21N4O10P2S	-3 cytosol
DISUCLY[c]	[Dihydrolipoyllysine-residue succinyltransferase] S-succinyl-CoA	C12H19NO4S2R	-1 cytosol
DIHYM[c]	(R)-5,6-Dihydrothymine	C5H8N2O2	0 cytosol
3UREB[c]	(R)-3-Ureidoisobutyrate	C5H9N2O3	-1 cytosol
SPYR[c]	3-Sulfo pyruvate	C3H2O6S	-2 cytosol
SO2[c]	Sulfur dioxide	SO2	0 cytosol
M1HYPT[c]	2-Methyl-1-hydroxypropyl-ThPP	C16H23N4O8P2S	-3 cytosol
MCOA[c]	2-Methylpropanoyl-CoA	C25H38N7O17P3S	-4 cytosol
M1HYBT[c]	2-Methyl-1-hydroxybutyl-ThPP	C17H29N4O8P2S	-3 cytosol
DIPT2BDPL[c]	[Dihydrolipoyllysine-residue (2-methylpropanoyl)transferase] S-succinyl-CoA	C13H24NO2S2R	0 cytosol
5AMD[c]	5-Aminopentanamide	C5H13N2O	1 cytosol
3HDCOA[c]	(3S)-3-Hydroxyadipyl-CoA	C27H39N7O20P3S	-5 cytosol
SLSYS[c]	L-Selenomethionine	C5H11NO2Se	0 cytosol
RX[c]	RX	R	0 cytosol
HAL[c]	Halide	H	0 cytosol
RSG[c]	R-S-Glutathione	C10H16N3O6SR	0 cytosol
RSC[c]	R-S-Cysteinylglycine	C5H10N2O3SR	1 cytosol
SSLC[c]	S-Substituted L-cysteine	C3H6NO2SR	0 cytosol
SSNALC[c]	S-Substituted N-acetyl-L-cysteine	C5H8NO3SR	0 cytosol
HSGLU[c]	[Heparan sulfate]-glucosamine	(C26H40N2O33S4)n	0 cytosol
HSNSGLU[c]	[Heparan sulfate]-N-sulfoglucosamine	(C26H40N2O36S5)n	0 cytosol
2H5MCMSHD[c]	2-Hydroxy-5-methyl-cis,cis-muconic semialdehyde	C7H8O4	0 cytosol
2H5MCMT[c]	2-Hydroxy-5-methyl-cis,cis-muconate	C7H8O5	0 cytosol
BACOA[c]	beta-Alanyl-CoA	C24H38N8O17P3S	-3 cytosol
ETRF[c]	Electron-transferring flavoprotein		0 cytosol
RETF[c]	Reduced electron-transferring flavoprotein		0 cytosol
ENPLYS[c]	Enzyme N6-(S-propyldihydrolipoyl)lysine	C11H20NO2S2R	0 cytosol
2HTHDP[c]	2-(alpha-Hydroxypropyl)thiamine diphosphate	C15H25N4O8P2S	0 cytosol
CACT[c]	cis-Aconitate	C6H3O6	-3 cytosol
TSCP[c]	Thiocarboxy-[sulfur-carrier protein]	C4H7N2O2SR	0 cytosol
VACID[c]	Valproic acid	C8H15O2	-1 cytosol
3HDACID[c]	3-Hydroxyvalproic acid	C8H16O3	0 cytosol
2EDDPHPD[c]	2-Ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine	C20H23N	0 cytosol
2E5MDPPYR[c]	2-Ethyl-5-methyl-3,3-diphenyl-1-pyrroline	C19H21N	0 cytosol
6TAMOPH[c]	6-Thioxanthine 5'-monophosphate	C10H13N4O8PS	0 cytosol
6TGMOPH[c]	6-Thioguanosine monophosphate	C10H14N5O7PS	0 cytosol
THGN[c]	Thioguanine	C5H5N5S	0 cytosol
2S3SMETCOA[c]	(2S,3S)-3-Hydroxy-2-methylbutanoyl-CoA	C26H40N7O18P3S	-4 cytosol
2SISOLATE[c]	(2S)-2-Isopropylmalate	C7H10O5	-2 cytosol
3MBUTCOA[c]	3-Methylbutanoyl-CoA	C26H40N7O17P3S	-4 cytosol
3OXPRPA[c]	3-Oxopropanoate	C3H3O3	-1 cytosol
ALACS[c]	(S)-2-Acetolactate	C5H7O4	-1 cytosol
AMISO[c]	L-3-Amino-isobutanoate	C4H9NO2	0 cytosol
BALA[c]	beta-Alanine	C3H7NO2	0 cytosol
CYC[c]	Cyclomaltodextrin	(C6H10O5)n	0 cytosol
GSALD[c]	glutarate semialdehyde	C5H7O3	-1 cytosol
GSH[c]	Glutathione	C10H16N3O6S	-1 cytosol
MERCPPYR[c]	Mercaptopyruvate	C3H3O3S	-1 cytosol
MMCOAR[c]	(R)-Methylmalonyl-CoA	C25H35N7O19P3S	-5 cytosol
RIAMDIDINE[c]	4-(1-D-Ribitylamino)-5-amino-2,6-dihydroxypyrimidine	C9H16N4O6	0 cytosol
PHAC[c]	Phenylacetic acid	C8H7O2	-1 cytosol
SMESEMDE[c]	(S)-Methylmalonate semialdehyde	C4H5O3	-1 cytosol
PANTHE[c]	Pantothenate	C9H16NO5	-1 cytosol
NA2SO4[c]	Sodium sulfate	NA2SO4	0 cytosol
NA2SO4[e]	Sodium sulfate	NA2SO4	0 Extracellular
TRPTRNA[c]	Trp-tRNA(Trp)	C11H11N2OR	1 cytosol

NTP[c]	nucleoside triphosphate	C5H12O13P3R	0 cytosol
SECAL[c]	secondary alcohol	CH2OR2	0 cytosol
KET[c]	ketone	COR2	0 cytosol
4PPTINE[c]	4'-phosphopantetheine	C11H23N2O7PS	0 cytosol
PSERP[c]	[protein] (L-serine/L-threonine) phosphate	R	0 cytosol
PSER[c]	[protein] Ser/Thr	R	0 cytosol
5METURA[c]	5-methyluracil	C5H6N2O2	0 cytosol
PGLU[c]	[protein]-α-L-glutamate	R	0 cytosol
PGLUOME[c]	[protein]-L-glutamate-O5-methyl-ester	R	0 cytosol
PGLN[c]	[protein]-L-glutamine	R	0 cytosol
RIBN[c]	ribonucleotides	R	0 cytosol
NPPI[c]	nucleoside diphosphate	C5H11O10P2R	0 cytosol
TRNAP[c]	tRNA precursor	C10H17O10PR2(C5H8O6PR)n	0 cytosol
TRNAC3CCA[c]	tRNA containing a 3' CCA	R	0 cytosol
7AM7DEGS[c]	7-aminomethyl-7-deazaguanosine	R	0 cytosol
EPQS[c]	epoxyqueuosine	C17H24N5O11P(C5H8O6PR)n(C	0 cytosol
ALATRNA[c]	Ala-tRNA(His)	R	0 cytosol
OXTRD[c]	oxidized thioredoxin	C10H12N4O4S2R4	0 cytosol
GLYTRNA[c]	Gly-tRNA(Gly)	C2H4NOR	1 cytosol
2345THP[c]	2,3,4,5-Tetrahydrodipicolinate	C7H7NO4	-2 cytosol
METGCOA[c]	3-methylcrotonoyl-CoA	C26H42N7O17P3S	0 cytosol
5APTAL[c]	5-Aminopentanal	C5H11NO	0 cytosol
3APTAL[c]	3-Aminopropanal	C3H7NO	0 cytosol
H2PO4[e]	Dihydrogen phosphate	H2PO4	0 Extracellular
HPO4[e]	Hydrogen phosphate	HPO4	0 Extracellular
1CINOL[c]	1D-chiro-Inositol	C6H12O6	0 cytosol
AMYLS2[e]	Amylose(n+1)	C48H80O40	0 extracellular
CGMP[c]	cyclic-GMP	C10H11N5O7P	-1 cytosol
DACYL[c]	Diacetyl	C4H6O2	0 cytosol
DGTE[c]	5-Deoxy-D-glucuronate	C6H9O7	-1 cytosol
DHDGTE[c]	2-Deoxy-5-keto-D-gluconic acid	C6H9O6	-1 cytosol
DKHP[c]	2-Deoxy-5-keto-D-gluconic acid 6-phosphate	C6H8O9P	-3 cytosol
ENAT[c]	Ethylnitronate	C2H4NO2	-1 cytosol
GDPMAN[e]	GDP-α-D-mannose	C16H23N5O16P2	-2 extracellular
KDCINOL[c]	1-Keto-D-chiro-inositol	C6H10O6	0 cytosol
LACL[c]	D-Lactaldehyde	C3H6O2	0 cytosol
MLTIOSE[c]	maltotriose	C18H32O16	0 cytosol
MLTOSE[c]	maltotetraose	C24H42O21	0 cytosol
SACTN[c]	(S)-Acetoin	C4H8O2	0 cytosol
UDPKGNACA[c]	UDP-2-acetamido-2-deoxy-α-D-ribo-hex-3-uluronate	C17H23N3O18P2	0 cytosol
UDPAGNACA[c]	UDP-2-acetamido-3-amino-2,3-dideoxy-α-D-glucuronate	C17H26N4O17P2	0 cytosol

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