

Table S3: List of biomass compounds. x, fraction of this compound is not known, but the fraction was set to 0.000006 for the deletion studies. gray, fraction of phospholipid based on Hirai et al, 1995

Fraction of total cell (mmol/g dry weight)	Biomass compound	Fraction of total cell (mmol/g dry weight)	Biomass compound
0.05	5mthf(c)	0.0084	lps-HP(c)
0.00005	accoa(c)	0.326	lys-L(c)
0.488	ala-L(c)	0.146	met-L(c)
0.001	amp(c)	x	mqn6(c)
0.281	arg-L(c)	0.00215	nad(c)
0.229	asn-L(c)	0.00005	nadh(c)
0.229	asp-L(c)	0.00013	nadp(c)
45.7318	atp(c)	0.0004	nadph(c)
x	btn(c)	0.0748946	pe-HP(c)
0.027907	clpn-HP(c)	0.0276	peptido-EC(c)
0.000006	coa(c)	0.0163548	pg-HP(c)
0.126	ctp(c)	0.176	phe-L(c)
0.087	cys-L(c)	x	pHEME(c)
0.0247	datp(c)	0.21	pro-L(c)
0.0254	dctp(c)	0.0033748	ps-HP(c)
0.0254	dgtp(c)	0.035	ptrc(c)
0.0247	dttp(c)	0.205	ser-L(c)
0.00001	fad(c)	0.007	spmd(c)
0.25	gln-L(c)	0.000003	succoa(c)
0.25	glu-L(c)	x	thm(c)
0.582	gly(c)	0.241	thr-L(c)
0.203	gtp(c)	0.054	trp-L(c)
45.5608	h2o(c)	0.131	tyr-L(c)
0.09	his-L(c)	0.003	udpg(c)
0.276	ile-L(c)	0.136	utp(c)
0.428	leu-L(c)	0.402	val-L(c)

Table S4: List of dead-ends in *i*IT341 GSM/GPR

Abbreviation	Official name	Location	Type
23dhmb	(R)-2,3-Dihydroxy-3-methylbutanoate	Cytosol	Product
23dhmp	(R)-2,3-Dihydroxy-3-methylpentanoate	Cytosol	Product
2dr5p	2-Deoxy-D-ribose 5-phosphate	Cytosol	Product
2ommb1	2-Octaprenyl-3-methyl-6-methoxy-1,4-benzoquinol	Cytosol	Product
2oph	2-Octaprenylphenol	Cytosol	Product
3mop	(S)-3-Methyl-2-oxopentanoate	Cytosol	Product
4abut	4-Aminobutanoate	Cytosol	Product
4hba	4-Hydroxy-benzyl alcohol	Cytosol	Product
4mop	4-Methyl-2-oxopentanoate	Cytosol	Product
acmam	N-Acetyl-D-muramoate	Cytosol	Product
acryl	Acrylate	Cytosol	Product
btamp	Biotinyl-5'-AMP	Cytosol	Product
cdpea	CDPethanolamine	Cytosol	Product
cgly	Cys-Gly	Cytosol	Product
cpppg1	Coproporphyrinogen I	Cytosol	Product
cytd	Cytidine	Cytosol	Product
dct	Deoxycytidine	Cytosol	Product
fe3	Fe ³⁺	Cytosol	Product
gluala	5-L-Glutamyl-L-alanine	Cytosol	Product
glyald	D-Glyceraldehyde	Cytosol	Product
lald-L	L-Lactaldehyde	Cytosol	Product
ni2	Ni ²⁺	Cytosol	Product
pac	Phenylacetic acid	Cytosol	Product
rib-D	D-Ribose	Cytosol	Product
ser-D	D-Serine	Cytosol	Product
sprm	Spermine	Cytosol	Product
thmmp	Thiamin monophosphate	Cytosol	Product
uri	Uridine	Cytosol	Product
2ahbut	(S)-2-Aceto-2-hydroxybutanoate	Cytosol	Substrate
2ombzl	2-Octaprenyl-6-methoxy-1,4-benzoquinol	Cytosol	Substrate
4ampm	4-Amino-2-methyl-5-phosphomethylpyrimidine	Cytosol	Substrate
4hbz	4-Hydroxybenzoate	Cytosol	Substrate
acmama	N-Acetyl-D-muramoyl-L-alanine	Cytosol	Substrate
alac-S	(S)-2-Acetylactate	Cytosol	Substrate
damp	dAMP	Cytosol	Substrate
dgmp	dGMP	Cytosol	Substrate
dgsn	Deoxyguanosine	Cytosol	Substrate
din	Deoxyinosine	Cytosol	Substrate
dxyl	1-deoxy-D-xylulose	Cytosol	Substrate
f1p	D-Fructose 1-phosphate	Cytosol	Substrate
fc1p	L-Fuculose 1-phosphate	Cytosol	Substrate
frmd	Formamide	Cytosol	Substrate
gthrd	Reduced glutathione	Cytosol	Substrate
ins	Inosine	Cytosol	Substrate
pad	2-Phenylacetamide	Cytosol	Substrate
pser-D	D-O-Phosphoserine	Cytosol	Substrate
uppg1	Uroporphyrinogen I	Cytosol	Substrate
xtsn	Xanthosine	Cytosol	Substrate