

Supplementary Material V

Commercially available ^{13}C Glc labels explored for designing ILEs for the PPP. The

following eight Glc labels were available from two leading isotope label manufacturers

(Cambridge Isotope Laboratories and Sigma Aldrich) without requiring custom synthesis in May

2012. Isotopomer notation: 1= ^{13}C , 0= ^{12}C , n=naturally abundant C (~1.1% ^{13}C).

Atom(s) of Glc labeled ^{13}C	Isotopomer
Naturally labeled	nnnnnn
1	100000
1,2	110000
2	010000
3	001000
4	000100
5	000010
6	000001
U	111111

Commonly available ^{13}C Ala and Gln labels for the GABA shunt network. Isotopomer notation: 1= ^{13}C , 0= ^{12}C , n=naturally abundant C (~1.1% ^{13}C).

Atom(s) of Ala labeled ^{13}C	Isotopomer	Atom(s) of Gln labeled ^{13}C	Isotopomer
Naturally abundant	nnn	Naturally abundant	nnnnn
1	100	1	10000
2	010	2	01000
3	001	1,2	11000
U	111	3	00100
		5	00001
		U	11111

Flux distributions evaluated from *in silico* ILE with 100% 1,2-¹³C Glc. Normal distributions (solid lines) fitted to flux frequency distributions (symbols) obtained by evaluating fluxes from *in silico* ILE with 100% 1,2-¹³C Glc with a goodness-of-fit criterion of $\chi^2 < 7$, as explained in the caption of Fig. 3 and text. Many fluxes are well identified, whereas a few are not so well identified.

