NMR Methods

Samples of IROA labelled glucose were weighed on an analytical balance and mixed with 594 µl of D2O and 6 µl of 111.11 mM d4-TSP in D2O, vortexed for 30s, and transferred into 5mm NMR tubes.

1H NMR spectra of serum samples were acquired on a Bruker Avance III 500 MHz NMR spectrometer (located at the AMRIS Facility UF, Gainesville, FL, USA) using a 5 mm FBBO-Z probe and ambient temperature of 27℃. A 1D zg pulse sequence was used for data acquisition. For each sample 16 transients were collected into 64k data points using a spectral width of 11.0 ppm, 3 s relaxation delay, and an acquisition time of 4 s per FID. NMR spectra were processed using MestReNova 8.0 (Mestrelab Research) software. Spectra were zero filled, and Fourier transformed after exponential multiplication with line broadening factor of 0.33. Phase of the spectra were manually corrected for each spectrum. The baseline correction was performed using the Whittaker Smoother with default parameters. Spectra were referenced internally to the TSP signal. Regions were integrated using the peaks calculation method. Integrals were quantified using the TSP signal.