Supplementary Materials

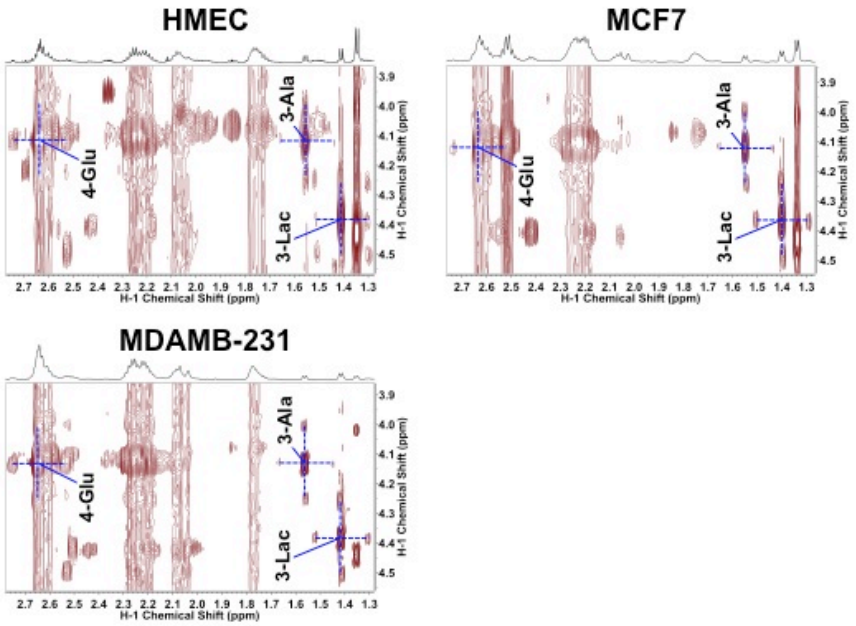

Figure S1. 2D ^{1}H TOCSY Spectra of three breast cell lines grown in the presence of ^{13}C-1-+^{13}C-2-glucose reveal differential capacity for oxidative and non-oxidative branches of the pentose phosphate pathway. TCA extracts were prepared from cells grown for 24 h in the presence of ^{13}C-1-+^{13}C-2 glucose. ^{13}C labeling patterns in lactate (Lac), Ala, and Glu.

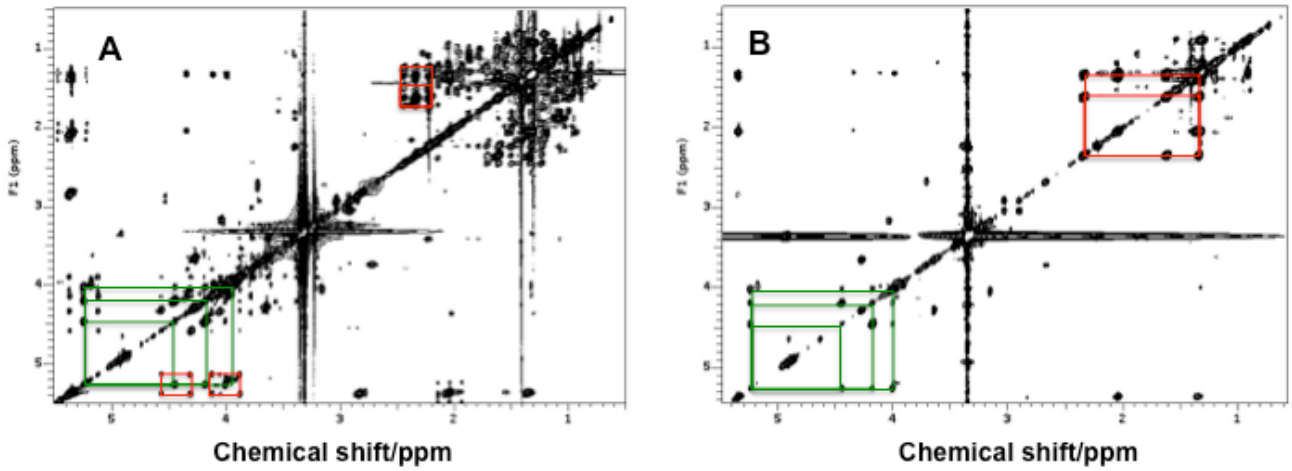

Figure S2. TOCSY spectra of lipid extracts of HMEC cells.
Cells were grown in the presence of labeled precursors for 24 h. The lipid fractions of the cell extracts were dissolved in d4-methanol and analyzed by TOCSY recorded at 14.1 T with an isotropic mixing time of 50 ms and a B_1 field strength of 8 kHz.
A. 5 mM [U-^{13}C]-glucose +2 mM [^{12}C,^{14}N]-Gln
B. 5 mM ^{12}C]-glucose +2 mM [U-^{13}C,^{15}N]-Gln

Glucose-derived carbon was incorporated into the glycerol and fatty acyl chains of the lipids, whereas whereas glutamine carbon was not incorporated significantly into either component.

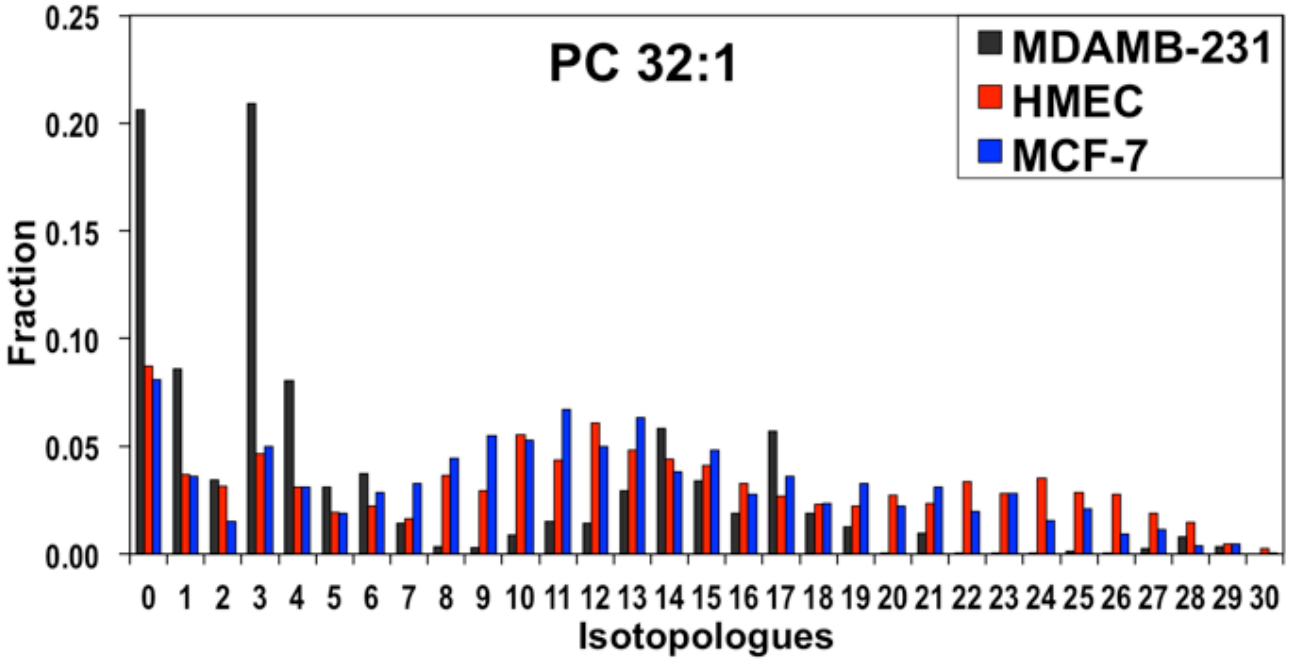

Figure S3. Isotopologue Distributions for PC 32 :1 in three cell lines by FT-ICR-MS

The isotopologues for PC 32 :1 +H were extracted from the FT-ICR-MS data using PREMISE (Lane, Fan et al. 2009) for the three cell lines grown in the presence of [U-^{13}C]-glucose. The total enrichment in this lipid was considerably lower in MDA-MB-231 than in either MCF-7 or HMEC (cf. m0 intensity), and was dominated by the glycerol labeling (m+3) with low labeling in the fatty acyl chains. The net ^{13}C incorporation into PC 32 :1 in HMEC and MCF-7 was similar, and showed extensive labeling of the fatty acyl chains.

Lane, A. N., T. W.-M. Fan, X. Xie, H. N. Moseley and R. M. Higashi (2009). "Stable isotope analysis of lipid biosynthesis by high resolution mass spectrometry and NMR " Anal. Chim. Acta **651**: 201-208.