Supporting information

Extended methods section

**S1.** RP-LC-MS elution profile of four isotopically labeled lipids and their natural analogues

**S2.** Comparison of the theoretical $^{13}$C isotopic enrichment and the observed isotopic pattern of PE 34:1

**S3.** Fragmentation pattern of labeled and unlabeled PA 34:1 and PS 34:1.

**S4.** Trueness of observed fold changes for 20 lipids analyzed by a RP-LC-MS method based on Full-MS quantification

**S5.** Calibration curves of PA 34:1 with and without internal standardization

**S6.** List of $^{13}$C isotopically enriched lipids identified in *Pichia pastoris*