

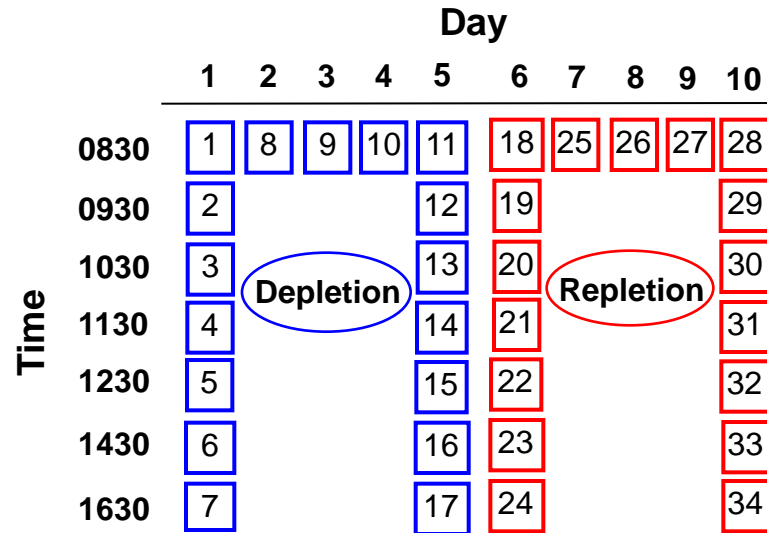
Online Supporting Material for Park et al “A Sulfur Amino Acid-Free Meal Increases Plasma Lipids in Humans”

**SUPPLEMENTAL TABLE 1**

*Characteristics of human participants*

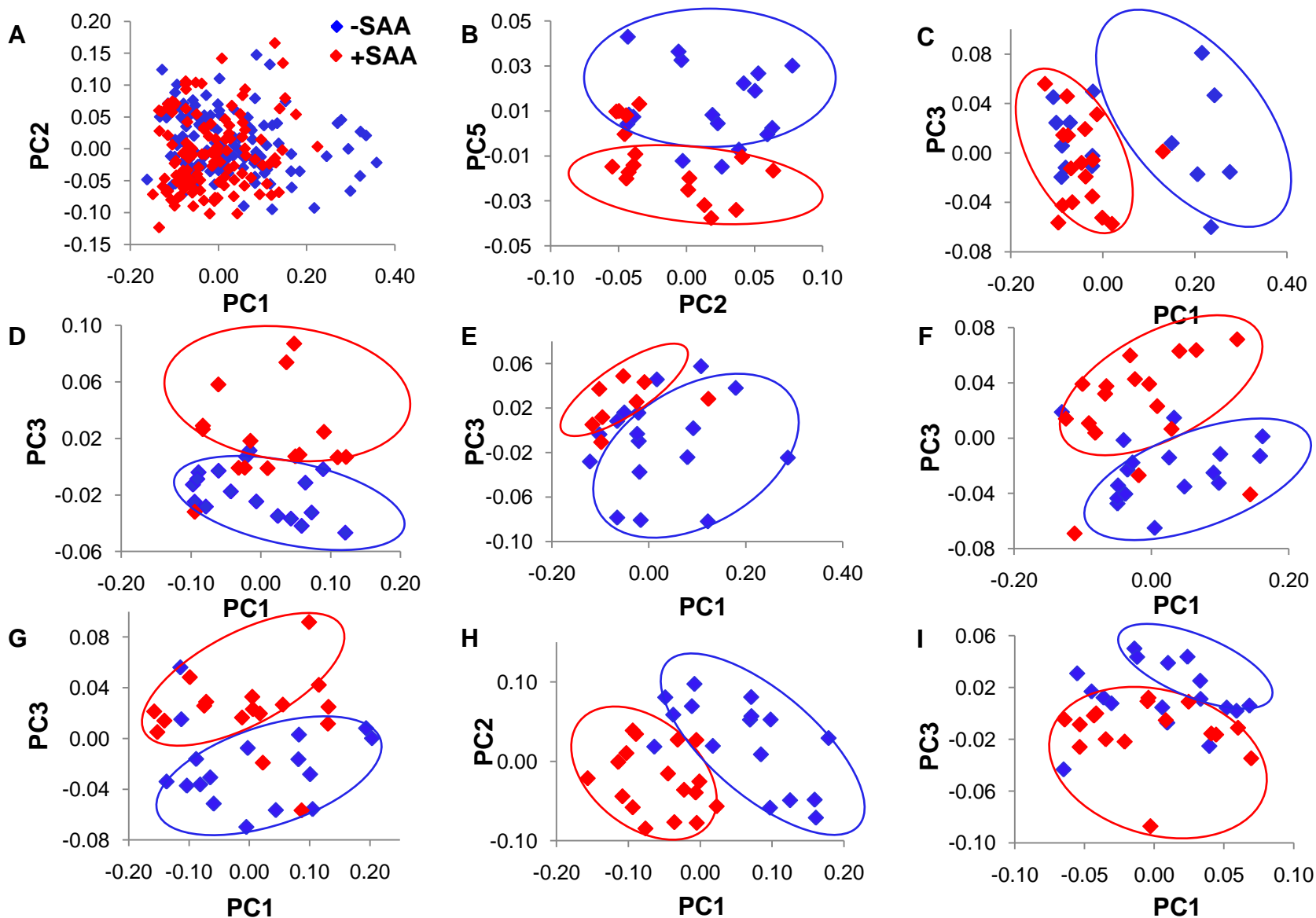
Age, y	Sex	Race	BMI
18	F	White	22.5
20	M	White	22.3
21	M	African-American	20.7
23	F	African-American	24.8
23	M	White	23.2
25	M	Asian	21.0
33	F	African-American	26.0
36	M	African-American	20.0

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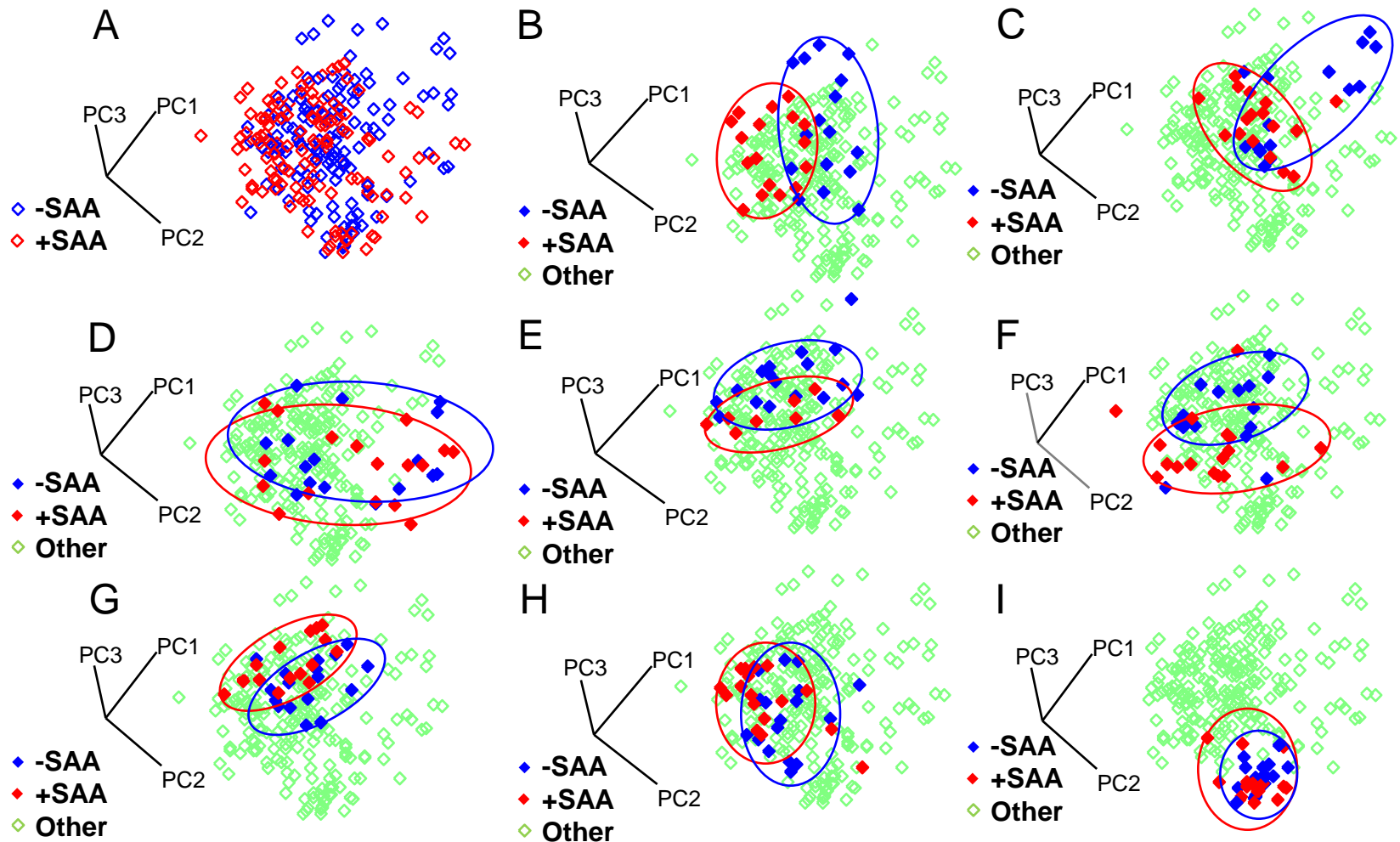
**SUPPLEMENTAL FIGURE 1** Study design for effect of dietary sulfur amino acids (SAA) content on plasma metabolic profiles in humans detected by <sup>1</sup>H-NMR spectroscopy. Subjects were equilibrated to the RDA for SAA for 3 days prior to initiation of the study. The study design provided 34 samples collected during sequential 5-d periods without (Depletion) and with (Repletion) 56 mg·kg<sup>-1</sup>·d<sup>-1</sup> SAA (Met:Cys, 2:1 by weight) in a semi-synthetic diet. The 0830 samples were after an overnight fasting period. A standardized meal was given immediately after the 0830 plasma collection, and samples were collected at indicated times. The baseline fasting Sample 1 (after equilibration to adequate SAA and before receiving SAA-free food) was grouped with “Repletion” for analyses; similarly, Sample 18 was grouped with “Depletion” samples for analyses.

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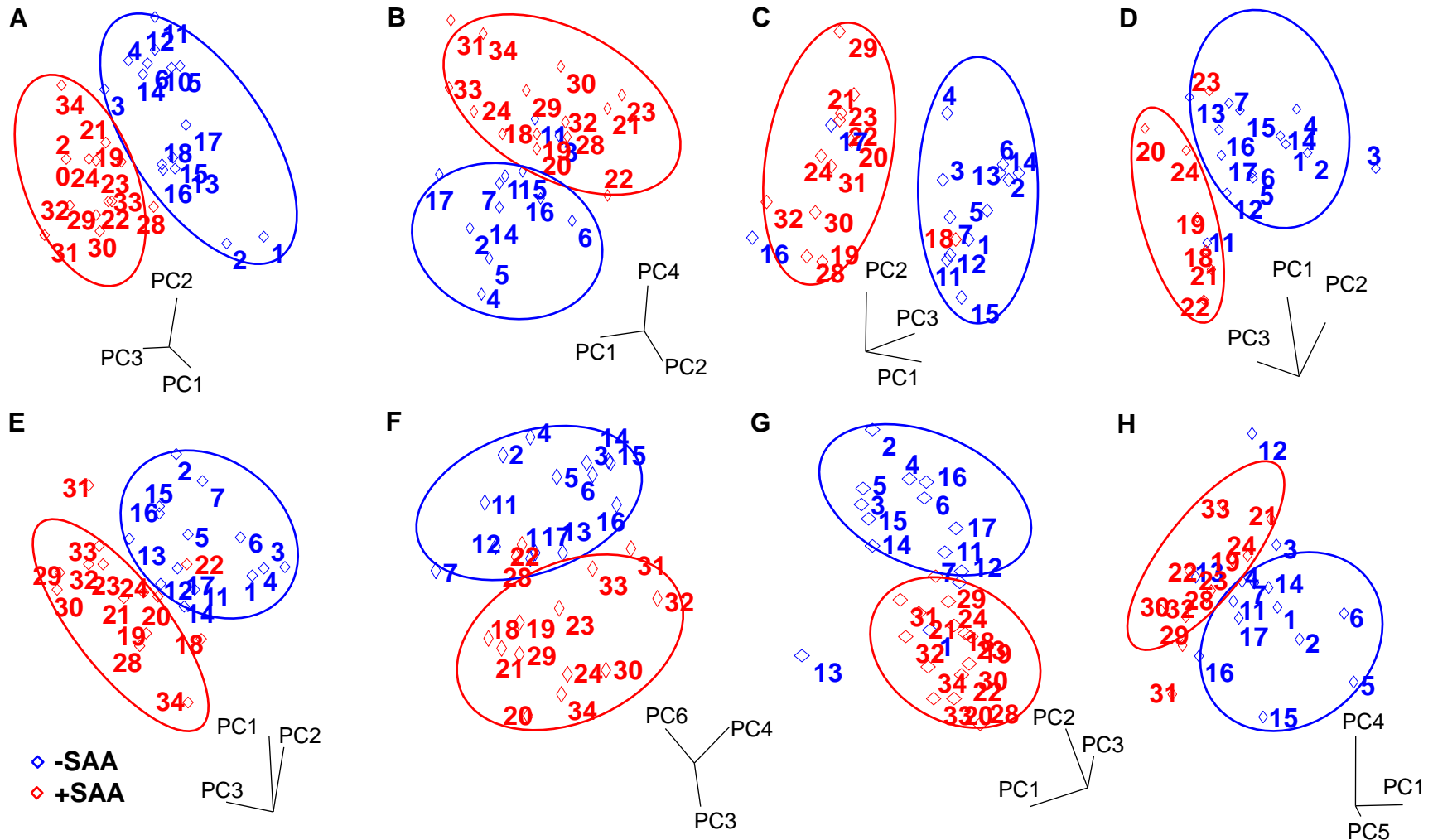
**SUPPLEMENTAL FIGURE 2** Two-dimensional PCA score plot of plasma  $^1\text{H}$ -NMR spectra for human participants receiving SAA-free food (-SAA) or SAA-replete food (+SAA), analyzed together (A) and separately (B-I). PC were selected from top 10 PC to maximally show separation according to SAA intake.

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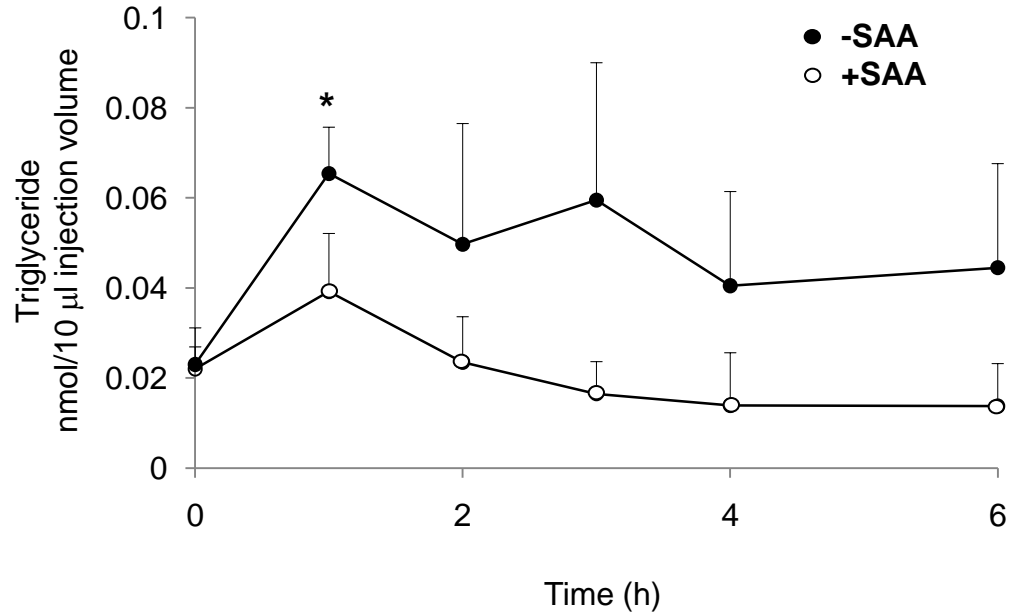
**SUPPLEMENTAL FIGURE 3** Three-dimensional PCA score plot for all plasma  $^1\text{H}$ -NMR spectra for 8 human participants analyzed together (A) and then selectively visualized from the same analysis (B-I) for period with SAA-free food (-SAA) and SAA-replete food (+SAA). For B-I, data for other individuals in A are shown in green for reference. The analysis shows that D, E and F had a common trajectory but the trajectories differed for the other participants.

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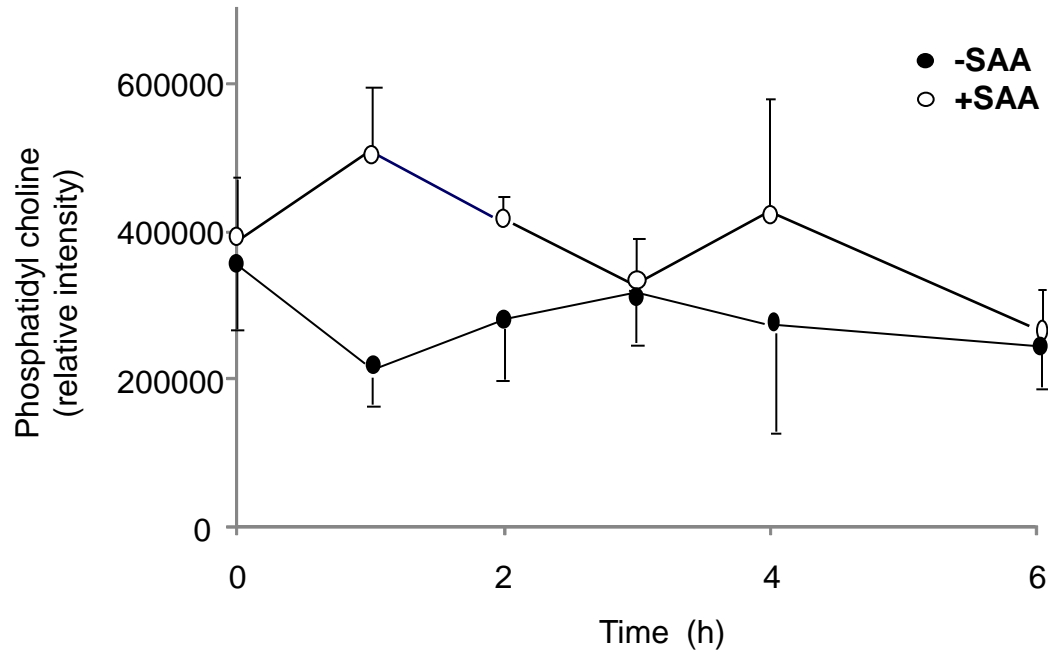
**SUPPLEMENTAL FIGURE 4** Three-dimensional PCA score plot for 34 plasma <sup>1</sup>H-NMR spectra for each human participant analyzed separately and color-coded for periods with SAA-free (-SAA) and SAA-replete (+SAA) diets. Principal Components (PC) were selected and axes are rotated to facilitate visualization of separation according to SAA intake. Numbered samples are from periods with SAA-free food (-SAA) and SAA-replete food (+SAA).

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**SUPPLEMENTAL FIGURE 5** Triglyceride level in human plasma following a meal without SAA (-SAA) compared to a meal with SAA (+SAA) as measured by liquid chromatography-Fourier transform mass spectrometry. Data are expressed as mean  $\pm$  SEM for 10  $\mu$ L plasma extract (1:2, plasma:acetonitrile) analyzed according to accurate mass  $m/z$  ( $\pm$  5 ppm) corresponding to triglyceride (16:0/16:0/20:4). SAA-replete diet, +SAA; SAA-free diet, -SAA ( $n=3-4$ ). \*Significant at  $P<0.05$  by paired  $t$ -test.

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**SUPPLEMENTAL FIGURE 6** Phosphatidyl choline level in human plasma following a meal without SAA (-SAA) compared to a meal with SAA (+SAA) as measured by liquid chromatography-Fourier transform mass spectrometry. Plasma samples were analyzed for accurate mass  $m/z$  ( $\pm 5$  ppm) corresponding to phosphatidyl choline (14:1(9Z)/14:1(9Z)). Data are expressed as mean of relative intensity  $\pm$  SEM for 3-4 samples. SAA-replete diet, +SAA; SAA-free diet, -SAA. Not significant by ANOVA or pairwise  $t$ -test by time; for 1 h and 2 h,  $P$  was between 0.05 and 0.10, indicating a trend.