

# HDL Phospholipids, but Not Cholesterol Distinguish Acute Coronary Syndrome From Stable Coronary Artery Disease

Peter J. Meikle, PhD; Melissa F. Formosa, BSc; Natalie A. Mellett, BSc(Hons); Kaushala S. Jayawardana, PhD; Corey Giles, PhD; David A. Bertovic, MBBS; Garry L. Jennings, MD; Wayne Childs, MBBS; Medini Reddy, BSc(Hons); Andrew L. Carey, PhD; Arul Baradi, MBBS; Shane Nanayakkara, MBBS; Andrew M. Wilson, MBBS, PhD; Stephen J. Duffy, MBBS, PhD; Bronwyn A. Kingwell, PhD

**Background**—Although acute coronary syndromes (ACS) are a major cause of morbidity and mortality, relationships with biologically active lipid species potentially associated with plaque disruption/erosion in the context of their lipoprotein carriers are indeterminate. The aim was to characterize lipid species within lipoprotein particles which differentiate ACS from stable coronary artery disease.

**Methods and Results**—Venous blood was obtained from 130 individuals with de novo presentation of an ACS (n=47) or stable coronary artery disease (n=83) before coronary catheterization. Lipidomic measurements (533 lipid species; liquid chromatography electrospray ionization/tandem mass spectrometry) were performed on whole plasma as well as 2 lipoprotein subfractions: apolipoprotein A1 (apolipoprotein A, high-density lipoprotein) and apolipoprotein B. Compared with stable coronary artery disease, ACS plasma was lower in phospholipids including lyso species and plasmalogens, with the majority of lipid species differing in abundance located within high-density lipoprotein (high-density lipoprotein, 113 lipids; plasma, 73 lipids). Models including plasma lipid species alone improved discrimination between the stable and ACS groups by 0.16 (C-statistic) compared with conventional risk factors. Models utilizing lipid species either in plasma or within lipoprotein fractions had a similar ability to discriminate groups, though the C-statistic was highest for plasma lipid species (0.80; 95% CI, 0.75–0.86).

**Conclusions**—Multiple lysophospholipids, but not cholesterol, featured among the lipids which were present at low concentration within high-density lipoprotein of those presenting with ACS. Lipidomics, when applied to either whole plasma or lipoprotein fractions, was superior to conventional risk factors in discriminating ACS from stable coronary artery disease. These associative mechanistic insights elucidate potential new preventive, prognostic, and therapeutic avenues for ACS which require investigation in prospective analyses. (*J Am Heart Assoc.* 2019;8:e011792. DOI: 10.1161/JAHA.118.011792.)

**Key Words:** acute coronary syndrome • coronary artery disease • high-density lipoprotein • lipidomics • lipids and lipoproteins • myocardial infarction

Clinical lipid profile is used to assist in assessing risk of coronary artery disease (CAD). However, the conventional lipid profile, including measures of total cholesterol, low-density lipoprotein (LDL)-cholesterol, high-density lipoprotein (HDL)-cholesterol, and triglycerides, does not predict whether patients will have a stable or an acute presentation. Contemporary lipidomic approaches now make it possible to assess many hundreds of lipid species, which may provide

information beyond conventional clinical lipid profiles.<sup>1</sup> We have previously shown the ability of whole-plasma lipidomics to discriminate acute coronary syndromes (ACS) from stable CAD<sup>2</sup> and improve prospective risk prediction<sup>3</sup> in subcohorts of the ADVANCE<sup>4</sup> (Action in Diabetes and Vascular Disease: Preterax and Diamicon-MR Controlled Evaluation) and LIPID<sup>5</sup> (Long-Term Intervention with Pravastatin in Ischemic Disease) trials.

From the Baker Heart and Diabetes Institute, Melbourne, Australia (P.J.M., M.F.F., N.A.M., K.S.J., C.G., D.A.B., G.L.J., W.C., M.R., A.L.C., S.N., S.J.D., B.A.K.); Department of Cardiology, The Alfred Hospital, Melbourne Australia (D.A.B., G.L.J., W.C., S.N., S.J.D.); St Vincent's Hospital, Melbourne, Australia (A.B., A.M.W.); Box Hill Hospital, Melbourne, Australia (W.C.).

Accompanying Tables S1 through S3 are available at <https://www.ahajournals.org/doi/suppl/10.1161/JAHA.118.011792>

**Correspondence to:** Bronwyn Kingwell, PhD, Metabolic & Vascular Physiology Laboratory, Baker Heart & Diabetes Institute, P.O. Box 6492, Melbourne, Victoria 3004, Australia. E-mail: [bronwyn.kingwell@baker.edu.au](mailto:bronwyn.kingwell@baker.edu.au)

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## Clinical Perspective

### What Is New?

- Although acute coronary syndromes are a major cause of morbidity and mortality, relationships with biologically active lipid species potentially associated with plaque disruption/erosion in the context of their lipoprotein carriers (eg, high-density lipoprotein, low-density lipoprotein) were previously indeterminate.
- Using a lipidomic approach, multiple lysophospholipids, but not cholesterol, were shown to be present at significantly lower concentration within the high-density lipoprotein particles of those presenting with acute coronary syndromes compared with stable coronary artery disease.

### What Are the Clinical Implications?

- Lipidomics, when applied to either whole plasma or lipoprotein fractions, was superior to conventional clinical risk factors in discriminating acute coronary syndromes from stable coronary artery disease and may have future applications for risk prediction, prevention, and novel therapeutic approaches.

The many hundreds of different lipid species in blood, with different chemical and biological properties, are unevenly distributed among the lipoprotein particles that carry them (eg, HDL and LDL). These lipoprotein particles play specific roles in atherosclerotic pathophysiology, and so measuring lipids within lipoprotein particle families may yield more-sensitive markers of disease presentation. To explore this possibility, we examined blood samples from people presenting to the cardiac catheterization laboratory with either stable CAD or ACS in a more-detailed analysis of the lipids carried within lipoprotein fractions. The aim was to determine whether the lipid signatures within the lipoprotein fractions could better distinguish presentation with ACS from stable CAD than whole-plasma lipidomic approaches.

## Methods

In accord with the Transparency and Openness (TOP) Guidelines, the authors will make the data and methods available on request.

## Participant Recruitment

One-hundred and thirty individuals with de novo presentation of an ACS (ST-segment-elevation myocardial infarction or non-ST-segment-elevation myocardial infarction) or stable CAD and undergoing cardiac catheterization at The Alfred Hospital (Melbourne, Australia), St Vincent's Hospital

(Melbourne, Australia), or Box Hill Hospital (Melbourne, Australia) were recruited between October 2009 and July 2015. Only individuals with a stenosis  $\geq 50\%$  in a major coronary artery were included. Classification as either ACS (ST-segment-elevation myocardial infarction,  $n=36$  or non-ST-segment-elevation myocardial infarction,  $n=11$ ) or stable CAD ( $n=83$ ) was adjudicated by 2 independent cardiologists on the basis of symptoms, 12-lead ECG, and cardiac troponin with discrepancies resolved by consultation with a third senior cardiologist (Table 1).<sup>6</sup> Patients who had unstable angina or had undergone previous coronary revascularization were excluded. The study was approved by the Ethics Committees of The Alfred Hospital, St. Vincent's Hospital, and Box Hill Hospital and was performed in accord with the Declaration of Helsinki (2013). Written informed consent was obtained from all participants.

## Lipidomic Analyses

Venous blood samples for lipidomic analyses were collected before coronary catheterization. Importantly, this sampling time frame was before the lipid acute phase response, which occurs 24 to 48 hours after the event with maximal changes observed 4 to 5 days later.<sup>7</sup> Plasma was prepared from whole blood (refrigerated at 4°C after collection) by centrifugation (1500g, 10 minutes, 4°C) within 6 hours of collection and stored at  $-80^{\circ}\text{C}$  until required. These conditions have been shown to have minimal effects on novel plasma lipid species,<sup>8</sup> and we expect that any small changes during this time would be consistent across samples and groups. For each study participant, lipidomic measurements were performed on whole plasma as well as an apolipoprotein A1 (apoA) and an apolipoprotein B (apoB) fraction derived using a simple precipitation method amenable to clinical application.<sup>9</sup> ApoA1 is the major and defining lipoprotein in HDL particles whereas the apoB fraction contains a combination of LDL, very-low-density lipoprotein, intermediate-density lipoprotein, and chylomicron particles.

Plasma lipids were isolated from whole plasma as well as the apoA and apoB fractions (each 10  $\mu\text{L}$ ) using a single-phase chloroform/methanol extraction as previously described.<sup>10</sup> Lipid analysis was performed by liquid chromatography electrospray ionization/tandem mass spectrometry using an Agilent 1290 HPLC coupled to an Agilent 6490 triple quadrupole mass spectrometer (Agilent Technologies, Santa Clara, CA) using settings as follows: gas temperature 150°C, gas flow 17 L/min, nozzle pressure 20 psi, sheath gas temperature 200°C, sheath gas flow 10 L/min, capillary voltage 3500 V, and nozzle voltage 1000 V. Liquid chromatography was performed on a Zorbax Eclipse Plus C18, 1.8  $\mu\text{m}$ , 100 $\times$ 2.1 mm column (Agilent Technologies) using solvents A and B consisting of water/acetonitrile/isopropanol

**Table 1.** Participant Characteristics

Characteristic	Stable CAD (n=83)	Acute Coronary Syndrome (n=47)	P Value*
Age, y	65.0 (60.0, 71.0)	61.0 (53.0, 66.5)	0.010 <sup>†</sup>
Sex, % male	60 (72.3)	41 (87.2)	0.049 <sup>†</sup>
BMI, kg/m <sup>2</sup>	29.0 (26.0, 31.8)	28.4 (24.7, 32.4)	0.698
History			
Current smoker	16 (19.3)	18 (38.3)	0.034 <sup>†</sup>
Ex-smoker	44 (53.0)	13 (27.7)	0.004 <sup>†</sup>
Nonsmoker	23 (27.7)	15 (31.9)	0.754
Dyslipidemia	67 (80.7)	28 (59.6)	0.010 <sup>†</sup>
Hypertension	64 (77.1)	27 (57.5)	0.020 <sup>†</sup>
Type 2 diabetes mellitus	24 (28.9)	15 (31.9)	0.863
Stroke	4 (4.82)	4 (8.51)	0.400
PAD	9 (10.8)	3 (6.38)	0.487
Family history of CAD	55 (66.3)	27 (57.5)	0.250
Clinical parameters			
SBP, mm Hg	136 (126, 150)	132 (121, 148)	0.382
DBP, mm Hg	79 (70, 86)	80 (73, 90)	0.189
Hemoglobin, g/L	138 (125, 147)	141 (130, 148)	0.340
WCC, ×10 <sup>9</sup> /L	6.40 (5.50, 7.95)	7.80 (6.75, 9.45)	0.006 <sup>†</sup>
Lymphocytes, ×10 <sup>9</sup> /L	1.70 (1.25, 2.25)	1.80 (1.60, 2.35)	0.207
Neutrophils, ×10 <sup>9</sup> /L	4.20 (3.32, 5.28)	5.00 (3.65, 6.10)	0.017 <sup>†</sup>
Monocytes, ×10 <sup>9</sup> /L	0.46 (0.40, 0.57)	0.50 (0.40, 0.70)	0.019 <sup>†</sup>
Platelets, ×10 <sup>9</sup> /L	226 (177, 278)	226 (189, 263)	0.848
Creatinine, μmol/L	74.0 (64.0, 84.0)	73.0 (65.0, 78.0)	0.630
Total cholesterol, mmol/L	4.30 (3.60, 5.10)	4.70 (3.80, 5.65)	0.113
LDL-cholesterol, mmol/L	2.40 (2.00, 3.00)	2.90 (2.05, 3.50)	0.061
HDL-cholesterol, mmol/L	1.10 (0.94, 1.33)	1.00 (0.84, 1.25)	0.076
Triglycerides, mmol/L	1.30 (1.00, 1.80)	1.60 (1.20, 2.10)	0.044 <sup>†</sup>
Glucose, mmol/L	5.60 (5.10, 7.10)	5.50 (5.20, 6.55)	0.971
LP(a), g/L	0.21 (0.05, 0.64)	0.30 (0.13, 0.59)	0.337
apoAI, g/L	1.37 (1.21, 1.54)	1.22 (1.13, 1.42)	0.021 <sup>†</sup>
apoB, g/L	0.84 (0.70, 0.98)	0.94 (0.73, 1.07)	0.333
sPLA2 activity, nmol/mL/min	4.71 (3.91, 5.91)	4.92 (3.61, 7.07)	0.496
Troponin I, ng/L	20 (11, 20)	1030 (178, 3527)	<0.001 <sup>†</sup>
hsCRP, mg/L <sup>‡</sup>	1.7 (0.6, 3.2)	5.8 (2.2, 10.1)	0.001 <sup>†</sup>

Characteristics represented as median (IQR) or number of participants (percentage). apoAI indicates apolipoprotein AI; apoB, apolipoprotein B; BMI, body mass index; CAD, coronary artery disease; DBP, diastolic blood pressure; HDL, high-density lipoprotein; hsCRP, high-sensitivity C-reactive protein; LDL, low-density lipoprotein; Lp(a), lipoprotein (a); PAD, peripheral arterial disease; SBP, systolic blood pressure; sPLA2, secretory phospholipase A2; WCC, white cell count.

\*P values are from either Mann-Whitney U tests (continuous variables) or chi-squared tests (categorical variables).

<sup>†</sup>P<0.05.

<sup>‡</sup>n=31 for stable CAD and n=20 for acute coronary syndrome.

50:30:20 and 1:9:90, respectively, both containing 10 mmol/L of ammonium formate.

A total of 533 lipid species were measured using dynamic multiple reaction monitoring where data were collected for a

retention time window specific to each lipid species. Results from the chromatographic data were analyzed using Mass Hunter Quant where relative lipid abundances were calculated by relating the area under the chromatogram for each lipid

species to the corresponding internal standard. Lipid species were summed to calculate the concentration of lipid classes and subclasses. Correction factors were applied to adjust for different response factors, where these were known. All plasma, apoA, and apoB fraction data were normalized to pmol/mL of plasma.

## Other Blood Biochemical Measures

Standard clinical biochemical and hematological measures were made by The Alfred Hospital Pathology Service, St Vincent's Pathology, and Eastern Health Pathology, including total cholesterol, HDL-cholesterol, LDL-cholesterol (Friedewald equation), triglycerides, troponin I or high-sensitivity troponin I (from July 2013), glucose, creatinine, lipoprotein (a), high-sensitivity C-reactive protein, and white cell count. ApoAI and apoB were measured in plasma on a Roche Cobas Integra 400 Plus blood analyzer (Roche, Indianapolis, IN), and secretory phospholipase A2 (PLA2) activity was measured using a plate-based colorimetric assay (Cayman Chemical, Ann Arbor, MI).

## Statistical Analysis

Clinical characteristics were compared by Mann–Whitney *U* or chi-squared tests for continuous and categorical variables, respectively.

### Univariate analysis

Before univariate analysis, lipidomic data were natural log transformed and scaled to SD units. Logistic regression models were used to determine the association of each lipid class/subclass and species with ACS. Models were adjusted for factors associated with ACS including age, sex, body mass index, current smoking status, and statin use. Resultant odds ratios, their CIs, and *P* values (after correction for multiple comparisons using the Benjamini–Hochberg approach) were used to determine strength of association.

### Development of multivariate models with optimism correction

First, models including a maximum of 10 features were developed separately using conventional risk factors (age, sex, body mass index, current smoking status, statin use, hypertension, LDL-cholesterol, HDL-cholesterol, and triglycerides) or the 533 lipid species derived from plasma. We then sought to compare 3 models which combined conventional risk factors with lipid species derived from lipidomics (lipidomic species) in (1) plasma, (2) the apoA fraction, and (3) the apoB fraction. Again, each model was restricted to a maximum of 10 features.

Lipid concentrations were natural log transformed and scaled to SD units. Lipidomic species and conventional risk factors (age, sex, body mass index, smoking status, statin use, hypertension, HDL-cholesterol, LDL-cholesterol, and triglycerides) were incorporated into the multivariable models using a forward step-wise logistic regression model, with Akaike information criterion minimization as the objective.<sup>11</sup> In this way, models were developed using risk factors alone, lipidomic species alone, or a combination of lipidomic species and risk factors. Models of increasing number of features were evaluated using the C-statistics and percent accuracy (true positives+true negatives divided by number of individuals) of each model to discriminate ACS from stable CAD.

Degree of optimism of each model, and thereby the expected performance, was assessed through a bootstrap resampling approach.<sup>12</sup> Within each bootstrap resample, 130 individuals (the number in the cohort) were randomly selected, with replacement, and the entire multivariable model development procedure performed. Optimism correction removes overestimation of model performance and uncertainty in feature selection inherent in multivariable model development. Degree of optimism was determined by comparing the performance of the bootstrap multivariable model on the bootstrap sample against the whole cohort (Optimism =  $C_{\text{BOOTSTRAP}} - C_{\text{WHOLE COHORT}}$ ). This was repeated 1000 times to obtain an empirical distribution of optimism. Reported C-statistics and percent accuracy of the multivariable model built on the entire cohort were corrected for optimism by subtracting the average optimism across all bootstrap resamples. CIs for model performance were obtained by subtracting the 2.5th and 97.5th percentiles of the optimism distribution.

Authors P.M. and B.K. have full access to all data and take responsibility for its integrity and the analysis.

## Results

### Participant Characteristics

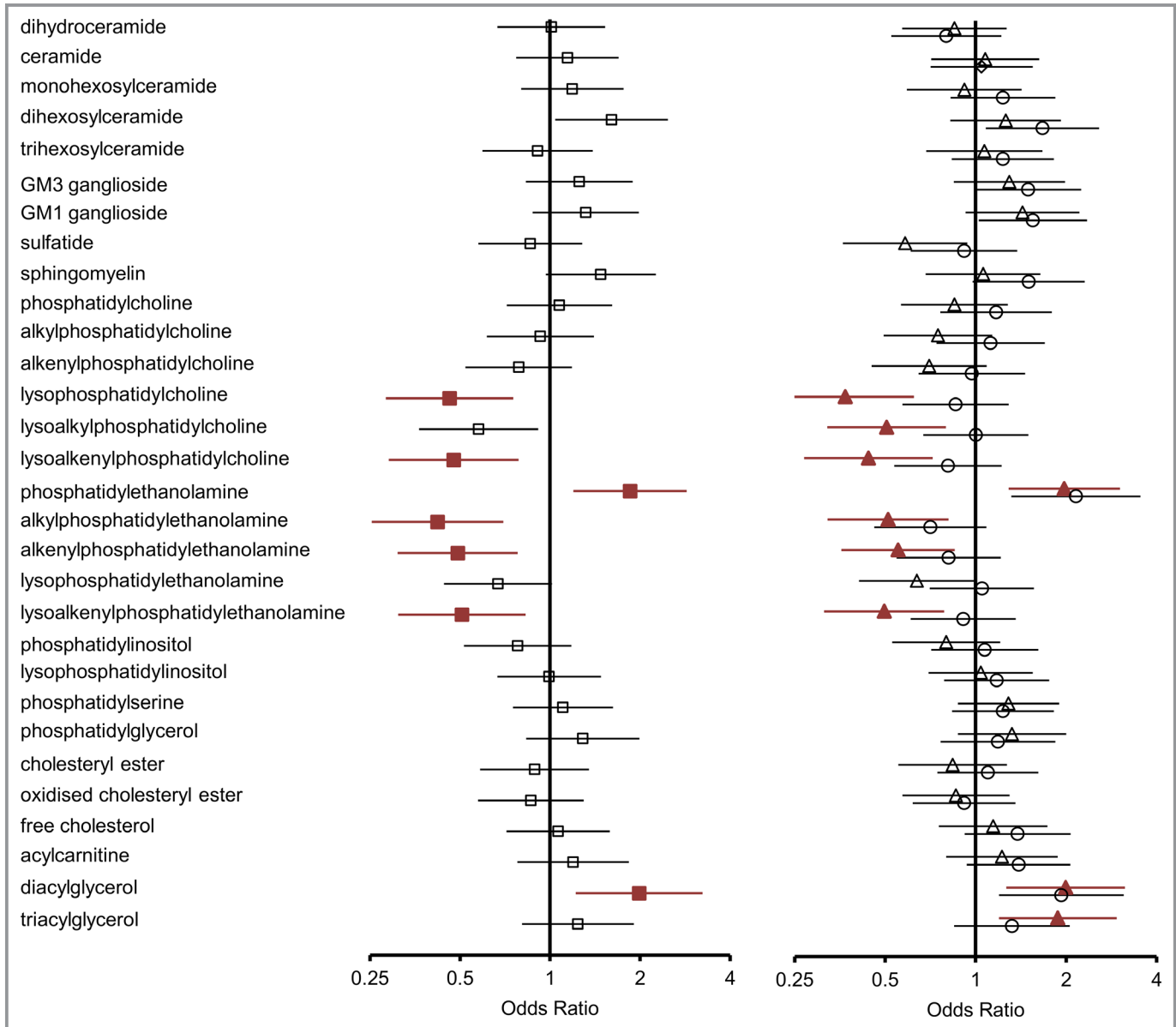
The ACS group was significantly younger and had a higher percentage of males and current smokers, although the percentage with dyslipidemia and hypertension was lower than the stable group (Table 1). The only conventional clinical lipid to differ significantly between presentations was plasma triglycerides, which was higher in the ACS group. Plasma apoAI was significantly lower in the ACS group. Consistent with the high inflammatory status associated with ACS, high-sensitivity C-reactive protein, total white cell count, and neutrophil and monocyte count were higher than the stable group. Angiographically assessed coronary disease severity was similar between groups (Table S1). The only medication to differ at

admission between groups was statin therapy, which was used with lower frequency in the ACS group (Table S2).

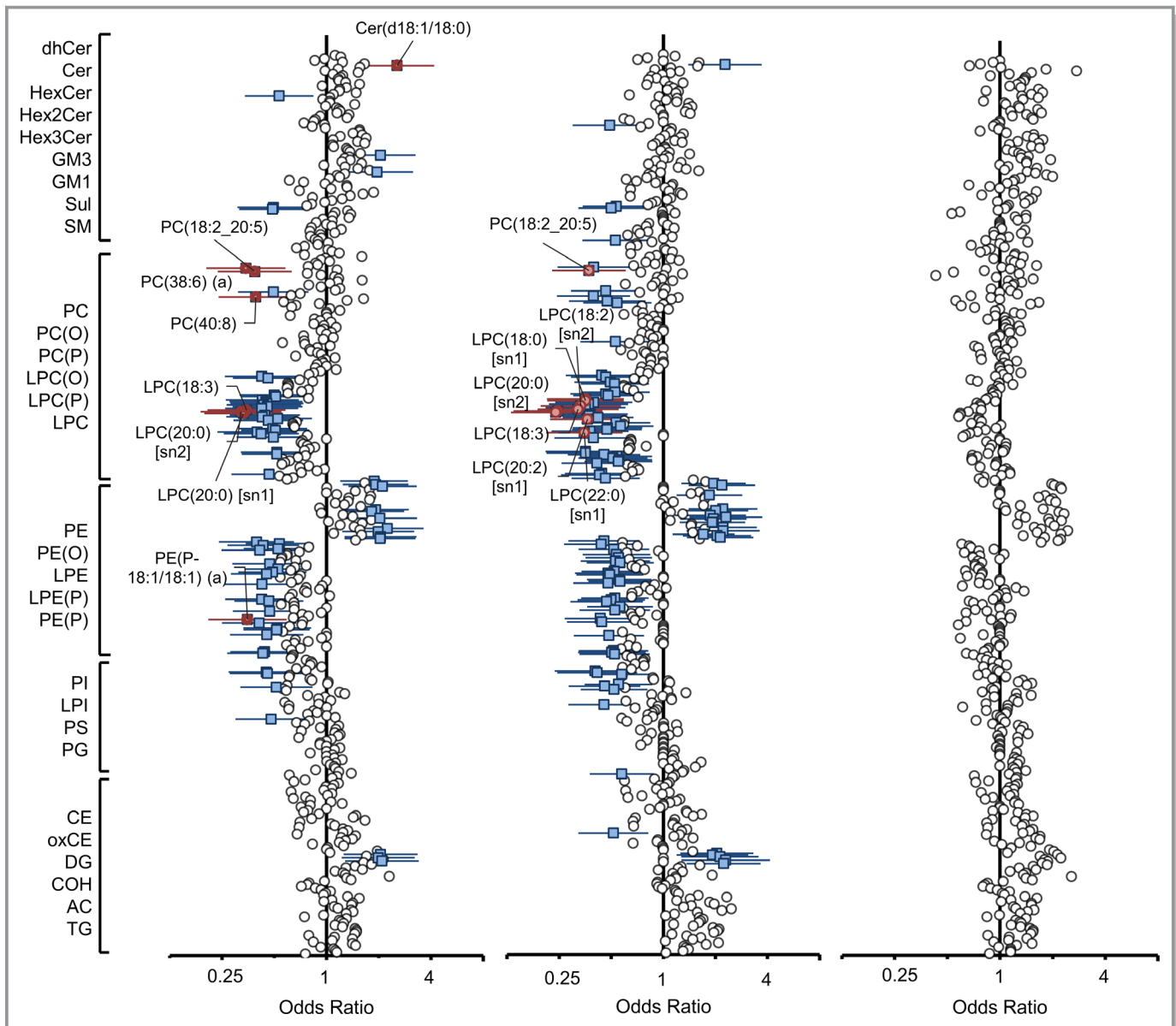
## Associations Between Lipid Classes/Subclasses and ACS

At the lipid class level, the apoA fraction showed most associations to ACS with 9 class/subclass relationships compared with only 7 within whole plasma and no significant class associations within the apoB fraction (Figure 1). Lipid

classes/subclasses positively associated with ACS in the apoA fraction were phosphatidylethanolamine, diacylglycerol, and triacylglycerol, whereas negative associations included lysophosphatidylcholine, lysoalkylphosphatidylcholine, lysoalkenylphosphatidylcholine, alkylphosphatidylethanolamine, alkenylphosphatidylethanolamine, and lysoalkenylphosphatidylethanolamine. Of these 9 class associations in the apoA fraction, the relationships with triacylglycerol and lysoalkylphosphatidylcholine were not significant when whole plasma was examined.



**Figure 1.** Association of lipid classes/subclasses with ACS. Odds ratios and 95% CIs for the association of plasma lipid classes with ACS (left panel). Odds ratios for the association of lipid classes from isolated apoA (triangles) and apoB (circles) fractions with ACS (right panel). All analyses are adjusted for age, sex, body mass index, current smoking status, and statin use. Lipid classes significantly associated with ACS after Benjamini–Hochberg correction are shown in red. ACS indicates acute coronary syndromes; apoA, apolipoprotein A; apoB, apolipoprotein B; GM1,  $G_{M1}$  ganglioside; GM3,  $G_{M3}$  ganglioside.



**Figure 2.** Association of lipid species with ACS. Odds ratios and 95% CIs for plasma lipid species associated with ACS (left panel). Odds ratios for lipid species from apoA lipoprotein fractions associated with ACS (middle panel). Odds ratios for lipid species from apoB lipoprotein fractions associated with ACS (right panel). All analyses are adjusted for age, sex, body mass index, current smoking status, and statin use. Lipid species significant after Benjamini–Hochberg correction are indicated by colored circles with 95% CIs indicated. Top 8 significant lipids are indicated by red circles with lipid species names. Tabulated results of the analysis can be found in Table S3. AC indicates acylcarnitine; CE, cholesteryl ester; Cer, ceramide; COH, free cholesterol; dhCer, dihydroceramide; DG, diacylglycerol; GM1,  $G_{M1}$  ganglioside; GM3,  $G_{M3}$  ganglioside; HexCer, monohexosylceramide; Hex2Cer, dihexosylceramide; Hex3Cer, trihexosylceramide; LPC, lysophosphatidylcholine; LPC(O), lysoalkylphosphatidylcholine; LPC(P), lysoalkenylphosphatidylcholine; LPE, lysophosphatidylethanolamine; LPE(P), lysoalkenylphosphatidylethanolamine; LPI, lysophosphatidylinositol; oxCE, oxidized cholesteryl ester; PC, phosphatidylcholine; PC(O), alkylphosphatidylcholine; PC(P), alkenylphosphatidylcholine; PE, phosphatidylethanolamine; PE(O), alkylphosphatidylethanolamine; PE(P), alkenylphosphatidylethanolamine; PG, phosphatidylglycerol; PI, phosphatidylinositol; PS, phosphatidylserine; SM, sphingomyelin; Sul, sulphatide; TG, triacylglycerol.

### Associations Between Lipid Species and ACS

At a lipid species level, 113 species were significantly associated with ACS in the apoA fraction (31 positively and 82 negatively), whereas this number dropped to only 73

species (17 positively and 56 negatively) in the whole-plasma analysis (Figure 2; Table S3). Although there were 40 fewer significantly associated species represented in plasma, in general the pattern in plasma was driven by lipids within the apoA fraction.

**Table 2.** Model Performance to Predict ACS

Model	Features*	C-Statistic (95% CI)	% Accuracy (95% CI)
Risk factors (RF)	Age, sex, hypertension, current smoking status	0.64 (0.56–0.71)	67 (59–73)
Plasma lipid species	PE(P-18:1/18:1)(a), Cer(d18:1/18:0), Hex3Cer(d18:1/18:0), CE(24:5), PE(16:0_18:2)	0.80 (0.72–0.86)	75 (70–81)
Plasma lipid species+RF	PE(P-18:1/18:1)(a), Cer(d18:1/18:0), Hex3Cer(d18:1/18:0), CE(24:5), PE(16:0_18:2)	0.80 (0.72–0.86)	75 (70–81)
ApoA lipid species	LPC(20:0) [sn-1], DG(18:0_18:2), PE(O-18:1/18:2), PC(O-16:0/20:3), PE(P-18:0/18:3)	0.78 (0.72–0.82)	69 (63–74)
ApoA lipid species+RF	LPC(20:0) [sn-1], DG(18:0_18:2), PE(O-18:1/18:2), PC(O-16:0/20:3), BMI	0.78 (0.70–0.84)	70 (64–76)
ApoB lipid species	Cer(d18:1/18:0), PE(P-18:0/18:1), PC(38:4) (b), PC(38:2), TG(14:1_16:0_18:1)	0.77 (0.74–0.81)	72 (67–76)
ApoB lipid species+RF	Cer(d18:1/18:0), PE(P-18:0/18:1), Sex, PC(38:4) (b), PC(18:0_22:4)	0.77 (0.71–0.81)	72 (67–78)

ACS indicates acute coronary syndromes; CE, cholesteryl ester; Cer(d18:0), dihydroceramide; Cer(d18:1), ceramide; DG, diacylglycerol; LPC, lysophosphatidylcholine; PC(O), alkylphosphatidylcholine; PE, phosphatidylethanolamine; PE(O), alkylphosphatidylethanolamine; PE(P), alkenylphosphatidylethanolamine; TG, triacylglycerol.

\* (a) or (b) indicates lipid species is 1 of an isoform that is separated chromatographically but has not yet been fully characterized; [sn-1] represents the position of the fatty acyl chain on the glycerol backbone.

The most marked negative associations in both plasma and the apoA fraction were with species of lysophosphatidylcholine and phosphatidylcholine. Significant positive associations in plasma and the apoA fraction included the ceramide species, Cer(d18:1/18:0), and a number of phosphatidylethanolamine and diacylglycerol species. In the apoA fraction, this extended to include further species from these classes as well as a number of triacylglycerol species. There were no significantly associated species within the apoB fraction.

### Discrimination Between ACS and Stable CAD Using Plasma Lipid Species and Risk Factors

In multivariate modeling with clinical risk factors alone, the C-statistic was maximal at 0.64 with incorporation of only 4 features (age, sex, hypertension, and current smoking status; Table 2; Figure 3). For plasma lipid species alone (from lipidomics), the C-statistic was 0.80 with the incorporation of 5 lipid species. When the model was permitted to select from clinical risk factors and plasma lipid species, the model remained unchanged from plasma lipid species alone. Models including lipid species from the apoA or apoB fractions either alone or in combination with risk factors yielded C-statistics marginally lower than for plasma lipid species, but superior to clinical risk factors alone (Table 2; Figure 3).

### Discussion

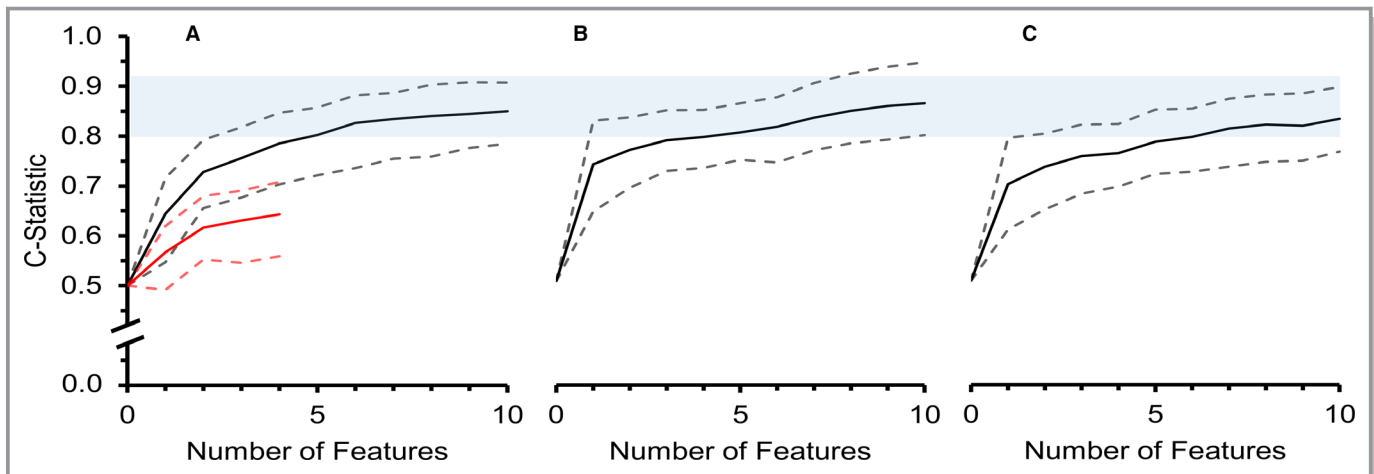
This study has revealed new lipid classes, subclasses, and species within HDL (apoA fraction), which are associated with ACS presentation and potentially related to plaque rupture/erosion. The majority of the relationships were inverse associations between ACS and lipid species within HDL and, in particular, phospholipids, but not cholesterol (including free

cholesterol and cholesteryl esters). The multiple lysophospholipids, including lysoplasmalogens, present at low levels within HDL may be mechanistically linked to coronary plaque disruption/erosion through modulation of HDL function. Such effects may either be an antecedent to the coronary event or occur during the acute phase or both (either cause or consequence).

In multivariate modeling, a lipidomic approach was superior in discriminating ACS from stable CAD compared with conventional clinical risk factors. Both phospholipid (including lyso and plasmalogen species) and sphingolipid (including glycosylated) species were foremost among those lipids incorporated into these models. Models utilizing lipid species from lipidomics in either plasma or within lipoprotein fractions were similar in their ability to distinguish groups, though plasma yielded the highest C-statistic (0.80) and accuracy (75%). These discoveries were only possible through examination of an expanded lipidomic profile than previously reported and through analysis of lipoprotein fractions in addition to whole plasma.<sup>2,3,13–15</sup>

### ACS Is Characterized by a Distinct HDL Phospholipid Profile

Both the plasma and HDL fraction in ACS were characterized by low phosphatidylcholine and high phosphatidylethanolamine, with the ratio between these phospholipids known to play a critical role in lipoprotein metabolism. The striking relationship between seven phospholipid classes in HDL and ACS included associations with 3 plasmalogen subclasses (alkenylphosphatidylethanolamine, lysoalkenylphosphatidylethanolamine, and lysoalkenylphosphatidylcholine), all of which were lower in the ACS group. These findings may have specific implications for HDL-associated enzymes. For example, reduced abundance of HDL particle surface phospholipids promotes dissociation of apoA-I through a cholesteryl ester transfer



**Figure 3.** Prediction of ACS using plasma, apoA, or apoB lipid species and risk factors. Optimism corrected C-statistics (solid line) with 95% CIs (dashed lines) representing performance from multivariable models created with risk factors alone (A, red lines), plasma lipid species (A, black lines), apoA lipid species and risk factors (B), or apoB lipid species and risk factors (C). Plasma lipids plus risk-factors data not shown because no risk factors were included in the optimized model. Optimal features (up to 10) were selected to predict ACS. ACS indicates acute coronary syndromes; apoA, apolipoprotein A; apoB, apolipoprotein B.

protein-mediated mechanism,<sup>16</sup> and reduction in the activity of lecithin:cholesterol acyltransferase is associated with reduced lysophosphatidylcholine.<sup>17</sup> Such actions would be expected to co-associate with a reduction in reverse cholesterol transport.<sup>18</sup>

Although we had reported the alkenylphosphatidylethanolamine relationship in an earlier cohort,<sup>2</sup> the observation that lysoplasmalogens are lower in ACS is novel. Plasmalogens are thought to protect against atherothrombotic disease by reducing oxidation<sup>19</sup> and potentially inhibiting endothelial cell apoptosis<sup>13</sup> or by promoting cholesterol efflux.<sup>20</sup> The antiatherosclerotic actions of plasmalogens have been supported experimentally in a preclinical study showing that plasmalogen enrichment by batylalcohol supplementation attenuated atherosclerosis by up to 70% in both apolipoprotein E and apolipoprotein E/glutathione peroxidase-1 deficient mice.<sup>19</sup> In the current analysis, the alkenylphosphatidylethanolamine (plasmalogen) PE(P-18:1/18:1)(a) was incorporated into the plasma multivariate model discriminating ACS from stable CAD, whereas other alkenylphosphatidylethanolamine species were present in the models derived from plasma fractions.

Lysophosphatidylcholine species were generally lower in those presenting with ACS, and this was driven by differences in the apoA fraction. Low levels of lysophosphatidylcholine have been previously associated with sepsis,<sup>21</sup> high-fat-diet-induced obesity in mice,<sup>22</sup> human diabetes mellitus,<sup>22</sup> and vascular damage in individuals with atherosclerosis.<sup>23</sup> Consistent with such associations, systemic treatment with lysophosphatidylcholine has shown therapeutic efficacy in inflammatory models, including sepsis<sup>24</sup> and cerebral ischemia.<sup>25</sup> Lysophosphatidylcholine has a variety of origins,

including dietary, but is also generated under the actions of the PLA2 family of enzymes. The biology of these enzymes is complex, and the bioactive lipid products of different PLA2 isoforms have been associated with both pro-<sup>26</sup> and antiatherosclerotic<sup>27</sup> actions. Furthermore, the activity of the secretory PLA2-IIA isoform has been positively associated with cardiovascular risk in both those who are asymptomatic as well as individuals with established coronary disease.<sup>28</sup> In the current study, secretory PLA2 activity was similar in ACS and stable CAD and does not therefore provide an explanation for lower levels of lysophosphatidylcholines in ACS. Thus, our observation that specific phosphatidylcholine species, which are substrates of PLA2 are low in ACS (Figure 2) may underlie the low levels of lysophosphatidylcholine species. The current study identified 24 different lysophosphatidylcholine species, which were reduced in plasma of the ACS group and 31 species in HDL. This analysis provides insight into the lysophosphatidylcholine species and their phosphatidylcholine substrates, which may potentially provide a new therapeutic avenue (lysophosphatidylcholine supplementation) in the setting of ACS. The endogenous affiliation of lysophosphatidylcholine species with HDL is compatible with recent developments in the use of HDL as a targeted nanoparticle drug delivery vehicle.<sup>29</sup>

## Strengths and Limitations

Through lipidomic analysis of both plasma, as well as lipoprotein fractions, from well-phenotyped individuals at the time of presentation to the coronary catheterization laboratory and before intervention, this study provides insight into lipids which may be directly involved in the pathophysiology



of plaque erosion/rupture and thrombosis. The cross-sectional design has limitations, including that all relationships are associative and that the species identified may incorporate both potential prospective markers of high short-term ACS risk as well as those modulated as a result of ACS. These species may indicate therapeutic targets for acute modulation around the time of plaque disruption and may be linked to inflammatory cascades, oxidation, and thrombosis. This analysis is distinct from previous studies seeking long-term prospective cardiovascular risk markers which examine the relationship between lipids measured many years before an event.<sup>3,5,14,15</sup> We also recognize the limitations of the current sample size, which, although relatively small, yielded a greater number of classes, subclasses, and individual species with significant odds ratios than our prospective outcome study.<sup>3</sup>

## Conclusion

HDL phospholipids (particularly lysophospholipids), but not cholesterol, distinguish acute coronary syndrome from stable CAD at the time of clinical presentation. Given the similarity in degree of obstructive coronary disease severity between groups, this suggests a role for HDL in plaque instability and erosion/rupture. Lipid species (from lipidomics) all provided better discrimination between ACS and stable CAD than did conventional risk factors. Whereas models based on plasma lipids versus those based on species from the apoA and apoB fractions selected different lipids, they returned similar C-statistics and accuracy values. Prospective investigations are required to determine the prognostic and therapeutic value of these observations with regard to prevention and management of ACS.

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## Disclosures

Professors Kingwell and Meikle have licensed lipid biomarkers to Zora Biosciences Oy, Finland. Professor Kingwell has held an advisory board position with CSL Ltd and also received research grants in the field of lipid metabolism as well as modest travel support. Since completing this work Professor Kingwell was offered and has committed to an employment role with CSL Ltd. The remaining authors have no disclosures to report.

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# **SUPPLEMENTAL MATERIAL**

**Table S1. Coronary disease severity.**

<b>Angiography</b>	<b>Stable CAD</b>	<b>Acute Coronary Syndrome</b>	<b>p-value*</b>
	<b>n=83</b>	<b>n=47</b>	
Maximum stenosis, >50%	83 (100)	47 (100)	0.886
<b>Vessels with &gt;50% stenosis</b>			
1 vessels	36 (43.4)	19 (40.4)	0.872
2 vessels	25 (30.1)	16 (34.0)	
3 vessels	22 (26.5)	12 (25.5)	

Angiography details for all participants represented as number of participants (percentage)

\*p-values are from either Mann-Whitney U tests (continuous variables) or chi-squared tests (categorical variables).

**Table S2. Medications.**

Variable	Stable CAD	Acute Coronary Syndrome	p-value*
	n=83	n=47	
Aspirin,	59 (71.1)	32 (68.1)	0.720
ACEI	30 (36.2)	15 (31.9)	0.626
ARBs	16 (19.3)	6 (12.8)	0.341
$\beta$ -Blockers	48 (57.8)	26 (55.3)	0.781
Ca Blockers	18 (21.7)	6 (12.8)	0.208
Clopidogrel	19 (22.9)	13 (27.7)	0.544
Diuretics	12 (14.5)	5 (10.6)	0.535
Statins	60 (72.3)	26 (55.3)	<b>0.049</b>

Medications at admission for all participants represented as number of participants (percentage).

ACEI, angiotensin-converting enzyme inhibitors; ARBs, angiotensin receptor blockers; Ca, calcium channel. \*p-values are from either Mann-Whitney U tests (continuous variables) or chi-squared tests (categorical variables).

**Table S3. Associations of plasma, ApoA and ApoB lipidomic species with ACS.**

Lipid Species <sup>2</sup>	Logistic regression (ACS) - Plasma Lipid Species				Logistic regression (ACS) - ApoA Fraction Lipid Species <sup>1</sup>				Logistic regression (ACS) - ApoB Fraction Lipid Species <sup>1</sup>			
	OR	95% CI	p-value	p-value (BH) <sup>3</sup>	OR	95% CI	p-value	p-value (BH) <sup>3</sup>	OR	95% CI	p-value	p-value (BH) <sup>3</sup>
Cer(d18:0/16:0)	1.12	(0.75 - 1.69)	5.77E-01	7.48E-01	ND	ND	ND	ND	ND	ND	ND	ND
Cer(d18:0/20:0)	1.21	(0.81 - 1.81)	3.55E-01	5.60E-01	1.17	(0.78- 1.75)	4.44E-01	6.37E-01	0.92	(0.61- 1.37)	6.72E-01	8.41E-01
Cer(d18:0/22:0)	0.98	(0.64 - 1.49)	9.09E-01	9.44E-01	0.81	(0.54- 1.21)	3.04E-01	5.00E-01	0.77	(0.51- 1.18)	2.38E-01	5.19E-01
Cer(d18:0/24:0)	0.86	(0.57 - 1.30)	4.68E-01	6.58E-01	0.71	(0.47- 1.08)	1.13E-01	2.40E-01	0.67	(0.43- 1.04)	7.35E-02	3.21E-01
Cer(d18:0/24:1)	1.24	(0.81 - 1.89)	3.24E-01	5.26E-01	1.00	(0.68- 1.48)	9.98E-01	9.98E-01	1.01	(0.67- 1.52)	9.48E-01	9.67E-01
Cer(d18:1/16:0)	1.66	(1.09 - 2.51)	<b>1.71E-02</b>	9.19E-02	1.61	(1.04- 2.49)	<b>3.25E-02</b>	1.03E-01	1.84	(1.20- 2.81)	<b>5.33E-03</b>	1.18E-01
Cer(d18:1/18:0)	2.55	(1.56 - 4.18)	<b>1.86E-04</b>	<b>1.30E-02</b>	2.27	(1.39- 3.70)	<b>9.83E-04</b>	<b>1.30E-02</b>	2.75	(1.64- 4.60)	<b>1.17E-04</b>	5.69E-02
Cer(d18:1/20:0)	1.56	(1.04 - 2.33)	<b>3.24E-02</b>	1.28E-01	1.58	(1.02- 2.44)	<b>4.12E-02</b>	1.18E-01	1.52	(1.00- 2.29)	<b>4.78E-02</b>	2.60E-01
Cer(d18:1/22:0)	1.17	(0.79 - 1.73)	4.42E-01	6.33E-01	1.10	(0.74- 1.66)	6.31E-01	7.77E-01	1.13	(0.76- 1.68)	5.44E-01	7.62E-01
Cer(d18:1/24:0)	0.98	(0.67 - 1.45)	9.35E-01	9.58E-01	0.89	(0.60- 1.34)	5.92E-01	7.47E-01	0.88	(0.59- 1.31)	5.33E-01	7.51E-01
Cer(d18:1/24:1)	1.52	(1.00 - 2.33)	5.26E-02	1.73E-01	1.24	(0.81- 1.91)	3.23E-01	5.21E-01	1.40	(0.93- 2.11)	1.06E-01	3.82E-01
HexCer(d18:1/16:0)	1.09	(0.73 - 1.62)	6.69E-01	8.10E-01	1.10	(0.72- 1.70)	6.58E-01	7.95E-01	1.38	(0.93- 2.05)	1.12E-01	3.89E-01
HexCer(d18:1/18:0)	1.24	(0.83 - 1.85)	2.89E-01	4.98E-01	0.99	(0.63- 1.54)	9.48E-01	9.70E-01	1.38	(0.91- 2.09)	1.35E-01	4.23E-01
HexCer(d18:1/20:0)	1.21	(0.81 - 1.79)	3.49E-01	5.53E-01	0.85	(0.54- 1.35)	4.95E-01	6.75E-01	1.31	(0.87- 1.98)	1.92E-01	4.92E-01
HexCer(d18:1/22:0)	1.17	(0.79 - 1.73)	4.42E-01	6.33E-01	0.91	(0.59- 1.42)	6.90E-01	8.10E-01	1.26	(0.84- 1.89)	2.67E-01	5.29E-01

HexCer(d18:1/24:0)	1.18	(0.80 - 1.75)	4.06E-01	6.10E-01	0.82	(0.53- 1.28)	3.84E-01	5.88E-01	1.14	(0.76- 1.70)	5.26E-01	7.48E-01
HexCer(d18:1/24:1)	1.29	(0.87 - 1.92)	2.12E-01	4.21E-01	1.02	(0.66- 1.58)	9.23E-01	9.55E-01	1.32	(0.88- 1.98)	1.78E-01	4.77E-01
Hex2Cer(d18:1/16:0)	1.55	(1.02 - 2.37)	<b>3.93E-02</b>	1.42E-01	1.30	(0.85- 1.99)	2.26E-01	4.02E-01	1.66	(1.08- 2.57)	<b>2.22E-02</b>	1.94E-01
Hex2Cer(d18:1/18:0)	0.95	(0.63 - 1.42)	7.87E-01	8.70E-01	0.80	(0.53- 1.22)	3.09E-01	5.06E-01	0.83	(0.56- 1.25)	3.78E-01	6.32E-01
Hex2Cer(d18:1/20:0)	1.31	(0.86 - 1.99)	2.15E-01	4.23E-01	1.09	(0.72- 1.65)	6.87E-01	8.10E-01	1.76	(1.14- 2.72)	<b>1.14E-02</b>	1.71E-01
Hex2Cer(d18:1/22:0)	1.19	(0.79 - 1.79)	4.03E-01	6.06E-01	1.14	(0.76- 1.73)	5.24E-01	6.99E-01	1.52	(1.01- 2.27)	<b>4.34E-02</b>	2.52E-01
Hex2Cer(d18:1/24:0)	1.19	(0.78 - 1.80)	4.19E-01	6.17E-01	1.06	(0.70- 1.59)	7.93E-01	8.71E-01	1.33	(0.89- 1.99)	1.60E-01	4.57E-01
Hex2Cer(d18:1/24:1)	1.48	(0.96 - 2.29)	7.46E-02	2.17E-01	1.22	(0.80- 1.86)	3.45E-01	5.48E-01	1.66	(1.09- 2.53)	<b>1.90E-02</b>	1.94E-01
Hex3Cer(d18:1/16:0)	1.10	(0.73 - 1.63)	6.55E-01	8.05E-01	1.19	(0.77- 1.84)	4.44E-01	6.37E-01	1.35	(0.91- 2.00)	1.31E-01	4.17E-01
Hex3Cer(d18:1/18:0)	0.53	(0.34 - 0.84)	<b>6.77E-03</b>	<b>4.88E-02</b>	0.64	(0.41- 1.00)	5.02E-02	1.35E-01	0.81	(0.53- 1.22)	3.14E-01	5.87E-01
Hex3Cer(d18:1/20:0)	1.05	(0.69 - 1.59)	8.20E-01	8.96E-01	0.95	(0.63- 1.43)	7.90E-01	8.70E-01	1.06	(0.72- 1.55)	7.69E-01	8.76E-01
Hex3Cer(d18:1/22:0)	0.95	(0.62 - 1.46)	8.29E-01	9.01E-01	1.20	(0.77- 1.89)	4.20E-01	6.19E-01	1.08	(0.72- 1.62)	7.03E-01	8.48E-01
Hex3Cer(d18:1/24:0)	1.04	(0.69 - 1.58)	8.40E-01	9.05E-01	1.04	(0.69- 1.58)	8.48E-01	9.13E-01	1.28	(0.85- 1.91)	2.37E-01	5.19E-01
Hex3Cer(d18:1/24:1)	1.05	(0.68 - 1.61)	8.30E-01	9.01E-01	1.20	(0.76- 1.87)	4.35E-01	6.35E-01	1.30	(0.87- 1.94)	2.05E-01	5.00E-01
GM3(d18:1/16:0)	1.46	(0.97 - 2.19)	7.23E-02	2.14E-01	1.40	(0.90- 2.18)	1.31E-01	2.72E-01	1.65	(1.09- 2.49)	<b>1.75E-02</b>	1.93E-01
GM3(d18:1/18:0)	0.99	(0.66 - 1.48)	9.57E-01	9.72E-01	0.91	(0.59- 1.40)	6.54E-01	7.95E-01	1.15	(0.77- 1.72)	4.93E-01	7.31E-01
GM3(d18:1/20:0)	1.14	(0.76 - 1.71)	5.18E-01	7.02E-01	1.46	(0.95- 2.25)	8.23E-02	1.88E-01	1.73	(1.11- 2.70)	<b>1.59E-02</b>	1.88E-01
GM3(d18:1/22:0)	1.18	(0.77 - 1.80)	4.47E-01	6.38E-01	1.38	(0.90- 2.11)	1.39E-01	2.84E-01	1.42	(0.95- 2.13)	9.08E-02	3.53E-01
GM3(d18:1/24:0)	1.20	(0.79 - 1.83)	3.96E-01	5.99E-01	0.96	(0.65- 1.44)	8.60E-01	9.22E-01	1.18	(0.79- 1.76)	4.28E-01	6.67E-01

GM3(d18:1/24:1)	1.15	(0.76 - 1.75)	4.99E-01	6.81E-01	1.34	(0.88-2.05)	1.77E-01	3.46E-01	1.52	(1.01-2.29)	<b>4.26E-02</b>	2.52E-01
GM1(d18:1/16:0)	1.35	(0.90 - 2.03)	1.45E-01	3.27E-01	1.43	(0.93-2.22)	1.06E-01	2.31E-01	1.55	(1.03-2.35)	<b>3.78E-02</b>	2.48E-01
GM1(d18:1/18:0)	0.92	(0.63 - 1.35)	6.78E-01	8.18E-01	ND	ND	ND	ND	ND	ND	ND	ND
GM1(d18:1/24:0)	1.32	(0.86 - 2.03)	2.11E-01	4.21E-01	ND	ND	ND	ND	ND	ND	ND	ND
Sulfatide(d18:1:/16:0(OH))	0.86	(0.58 - 1.30)	4.79E-01	6.70E-01	0.59	(0.37-0.95)	<b>2.91E-02</b>	9.36E-02	0.94	(0.63-1.43)	7.85E-01	8.79E-01
Sulfatide(d18:1:/16:0)	0.85	(0.57 - 1.26)	4.14E-01	6.13E-01	0.64	(0.41-1.00)	5.13E-02	1.35E-01	0.92	(0.62-1.37)	6.84E-01	8.46E-01
Sulfatide(d18:1:/24:0(OH))	0.74	(0.50 - 1.11)	1.49E-01	3.31E-01	ND	ND	ND	ND	ND	ND	ND	ND
Sulfatide(d18:1:/24:0)	0.97	(0.65 - 1.45)	8.93E-01	9.35E-01	0.82	(0.54-1.25)	3.63E-01	5.63E-01	0.98	(0.66-1.47)	9.33E-01	9.60E-01
Sulfatide(d18:1:/24:1(OH))	0.83	(0.56 - 1.23)	3.46E-01	5.52E-01	0.49	(0.30-0.80)	<b>4.41E-03</b>	<b>2.73E-02</b>	0.77	(0.51-1.16)	2.14E-01	5.04E-01
Sulfatide(d18:1:/24:1)	0.98	(0.67 - 1.45)	9.36E-01	9.58E-01	0.74	(0.48-1.16)	1.87E-01	3.53E-01	1.09	(0.72-1.66)	6.86E-01	8.46E-01
SM(34:3)	1.55	(0.98 - 2.45)	5.85E-02	1.86E-01	1.12	(0.71-1.77)	6.38E-01	7.83E-01	1.56	(1.01-2.43)	<b>4.67E-02</b>	2.60E-01
SM(35:2) (b)	1.55	(1.01 - 2.37)	<b>4.51E-02</b>	1.57E-01	1.06	(0.68-1.65)	7.90E-01	8.70E-01	1.43	(0.93-2.21)	1.05E-01	3.82E-01
SM(37:2)	1.43	(0.93 - 2.20)	1.07E-01	2.70E-01	1.10	(0.70-1.74)	6.77E-01	8.06E-01	1.57	(1.00-2.45)	<b>4.93E-02</b>	2.60E-01
SM(d16:1/19:0)	1.61	(1.05 - 2.47)	<b>3.02E-02</b>	1.27E-01	1.31	(0.85-2.00)	2.20E-01	3.96E-01	1.76	(1.13-2.74)	<b>1.20E-02</b>	1.71E-01
SM(d16:1/23:0)/SM(d17:1/22:0)	1.20	(0.81 - 1.78)	3.61E-01	5.62E-01	1.02	(0.68-1.54)	9.15E-01	9.49E-01	1.27	(0.84-1.90)	2.51E-01	5.28E-01
SM(d16:1/24:1)	1.70	(1.09 - 2.63)	<b>1.86E-02</b>	9.79E-02	1.26	(0.82-1.93)	2.97E-01	4.96E-01	1.67	(1.08-2.57)	<b>2.04E-02</b>	1.94E-01
SM(d17:1/14:0)	1.09	(0.73 - 1.64)	6.67E-01	8.10E-01	0.96	(0.63-1.45)	8.35E-01	9.07E-01	1.14	(0.76-1.70)	5.32E-01	7.51E-01
SM(d17:1/16:0)	1.52	(1.00 - 2.30)	5.14E-02	1.70E-01	1.16	(0.75-1.81)	5.01E-01	6.79E-01	1.52	(1.00-2.30)	5.08E-02	2.65E-01
SM(d17:1/24:1)	1.66	(1.07 - 2.59)	<b>2.48E-02</b>	1.18E-01	1.29	(0.82-2.04)	2.77E-01	4.67E-01	1.69	(1.09-2.64)	<b>2.01E-02</b>	1.94E-01



SM(d18:0/14:0)	1.08	(0.71 - 1.64)	7.11E-01	8.38E-01	0.90	(0.60- 1.35)	6.11E-01	7.64E-01	1.10	(0.72- 1.67)	6.66E-01	8.41E-01
SM(d18:0/16:0)	1.10	(0.72 - 1.68)	6.59E-01	8.08E-01	0.87	(0.57- 1.32)	5.09E-01	6.83E-01	1.20	(0.79- 1.81)	4.01E-01	6.46E-01
SM(d18:0/22:0)	1.30	(0.85 - 2.01)	2.28E-01	4.38E-01	1.03	(0.68- 1.53)	9.03E-01	9.42E-01	1.28	(0.84- 1.96)	2.56E-01	5.28E-01
SM(d18:1/14:0)/SM(d16:1/ 16:0)	1.33	(0.89 - 1.99)	1.70E-01	3.66E-01	1.03	(0.68- 1.57)	8.81E-01	9.27E-01	1.33	(0.89- 1.99)	1.68E-01	4.65E-01
SM(d18:1/16:0)	1.36	(0.90 - 2.07)	1.46E-01	3.27E-01	0.97	(0.62- 1.51)	8.80E-01	9.27E-01	1.45	(0.95- 2.22)	8.20E-02	3.43E-01
SM(d18:1/17:0)/SM(d17:1/ 18:0)	1.57	(1.02 - 2.41)	<b>3.91E-02</b>	1.42E-01	1.08	(0.71- 1.65)	7.10E-01	8.18E-01	1.32	(0.87- 2.01)	1.95E-01	4.93E-01
SM(d18:1/18:0)/SM(d16:1/ 20:0)	2.05	(1.28 - 3.27)	<b>2.61E-03</b>	<b>3.20E-02</b>	1.42	(0.90- 2.23)	1.28E-01	2.67E-01	1.95	(1.21- 3.13)	<b>5.82E-03</b>	1.23E-01
SM(d18:1/20:0)/SM(d16:1/ 22:0)	1.36	(0.91 - 2.03)	1.34E-01	3.10E-01	1.04	(0.68- 1.57)	8.67E-01	9.25E-01	1.43	(0.94- 2.17)	9.71E-02	3.62E-01
SM(d18:1/22:0)/SM(d16:1/ 24:0)	1.27	(0.84 - 1.93)	2.49E-01	4.57E-01	1.07	(0.71- 1.62)	7.36E-01	8.26E-01	1.42	(0.93- 2.18)	1.05E-01	3.82E-01
SM(d18:1/23:0)/SM(d17:1/ 24:0)	1.37	(0.91 - 2.07)	1.37E-01	3.13E-01	ND	ND	ND	ND	ND	ND	ND	ND
SM(d18:1/24:0)	1.23	(0.81 - 1.87)	3.38E-01	5.41E-01	0.90	(0.60- 1.36)	6.28E-01	7.74E-01	1.11	(0.74- 1.68)	6.13E-01	8.13E-01
SM(d18:1/24:1)	1.59	(1.03 - 2.46)	<b>3.54E-02</b>	1.37E-01	1.27	(0.82- 1.95)	2.80E-01	4.72E-01	1.63	(1.06- 2.50)	<b>2.53E-02</b>	1.97E-01
SM(d18:2/14:0)	0.97	(0.61 - 1.54)	8.89E-01	9.34E-01	0.82	(0.52- 1.29)	3.96E-01	5.94E-01	1.07	(0.69- 1.64)	7.69E-01	8.76E-01
SM(d18:2/16:0)	1.28	(0.84 - 1.96)	2.52E-01	4.57E-01	0.98	(0.63- 1.52)	9.15E-01	9.49E-01	1.43	(0.94- 2.18)	9.61E-02	3.62E-01
SM(d18:2/17:0)	1.52	(0.98 - 2.36)	6.18E-02	1.95E-01	1.22	(0.77- 1.93)	3.94E-01	5.93E-01	1.60	(1.02- 2.50)	<b>3.97E-02</b>	2.52E-01
SM(d18:2/18:0)	1.77	(1.11 - 2.84)	<b>1.67E-02</b>	9.17E-02	1.36	(0.85- 2.15)	1.97E-01	3.64E-01	1.85	(1.14- 3.00)	<b>1.26E-02</b>	1.71E-01
SM(d18:2/18:1)	1.96	(1.22 - 3.15)	<b>5.68E-03</b>	<b>4.43E-02</b>	1.61	(1.00- 2.58)	5.05E-02	1.35E-01	2.00	(1.24- 3.23)	<b>4.50E-03</b>	1.06E-01
SM(d18:2/20:0)	1.28	(0.84 - 1.95)	2.56E-01	4.63E-01	0.96	(0.61- 1.52)	8.76E-01	9.27E-01	1.31	(0.87- 2.00)	1.99E-01	4.97E-01
SM(d18:2/22:0)	1.15	(0.76 - 1.74)	5.01E-01	6.81E-01	0.82	(0.53- 1.29)	3.94E-01	5.93E-01	1.21	(0.80- 1.84)	3.59E-01	6.32E-01

SM(d18:2/23:0)	1.19	(0.79 - 1.80)	4.10E-01	6.12E-01	0.86	(0.56- 1.32)	4.77E-01	6.60E-01	1.19	(0.78- 1.81)	4.27E-01	6.67E-01
SM(d18:2/24:0)	1.04	(0.69 - 1.57)	8.58E-01	9.17E-01	0.80	(0.52- 1.24)	3.21E-01	5.21E-01	1.10	(0.73- 1.67)	6.43E-01	8.33E-01
PC(28:0)	0.61	(0.39 - 0.97)	<b>3.67E-02</b>	1.38E-01	0.61	(0.39- 0.97)	<b>3.49E-02</b>	1.09E-01	0.66	(0.43- 1.04)	7.07E-02	3.18E-01
PC(14:0_16:0)	0.74	(0.49 - 1.12)	1.53E-01	3.38E-01	0.70	(0.46- 1.07)	9.81E-02	2.17E-01	0.88	(0.58- 1.32)	5.26E-01	7.48E-01
PC(31:0) (a)	0.98	(0.66 - 1.47)	9.37E-01	9.58E-01	0.90	(0.61- 1.34)	6.14E-01	7.64E-01	1.00	(0.66- 1.50)	9.92E-01	9.92E-01
PC(31:0) (b)	1.31	(0.87 - 1.99)	2.01E-01	4.08E-01	1.13	(0.76- 1.69)	5.37E-01	7.09E-01	1.21	(0.80- 1.81)	3.66E-01	6.32E-01
PC(16:0_16:0)	1.31	(0.88 - 1.97)	1.88E-01	3.94E-01	1.12	(0.73- 1.70)	6.09E-01	7.64E-01	1.62	(1.05- 2.48)	<b>2.79E-02</b>	2.11E-01
PC(32:1)	1.06	(0.70 - 1.61)	7.66E-01	8.55E-01	1.02	(0.69- 1.53)	9.11E-01	9.48E-01	1.20	(0.78- 1.85)	4.01E-01	6.46E-01
PC(32:2)	0.70	(0.46 - 1.06)	9.03E-02	2.44E-01	0.65	(0.43- 0.98)	<b>4.14E-02</b>	1.18E-01	0.79	(0.52- 1.20)	2.66E-01	5.29E-01
PC(33:0)	1.87	(0.88 - 3.97)	1.02E-01	2.64E-01	1.08	(0.73- 1.61)	6.96E-01	8.13E-01	1.38	(0.90- 2.12)	1.42E-01	4.29E-01
PC(33:1)	1.62	(1.04 - 2.52)	<b>3.13E-02</b>	1.27E-01	1.25	(0.84- 1.88)	2.73E-01	4.65E-01	1.53	(0.98- 2.40)	5.97E-02	2.93E-01
PC(33:2)	1.37	(0.91 - 2.07)	1.31E-01	3.08E-01	1.29	(0.86- 1.94)	2.22E-01	3.96E-01	1.47	(0.96- 2.24)	7.67E-02	3.29E-01
PC(16:0_18:0)	0.83	(0.56 - 1.24)	3.64E-01	5.65E-01	0.65	(0.41- 1.02)	6.07E-02	1.55E-01	0.97	(0.65- 1.44)	8.78E-01	9.35E-01
PC(16:0_18:1)	1.23	(0.82 - 1.85)	3.13E-01	5.21E-01	1.10	(0.74- 1.64)	6.23E-01	7.71E-01	1.39	(0.90- 2.16)	1.39E-01	4.23E-01
PC(16:0_18:2)	1.08	(0.72 - 1.61)	7.18E-01	8.38E-01	1.05	(0.71- 1.57)	8.07E-01	8.85E-01	1.12	(0.74- 1.70)	5.81E-01	7.82E-01
PC(16:1_18:2)	0.98	(0.65 - 1.48)	9.22E-01	9.53E-01	0.91	(0.60- 1.38)	6.59E-01	7.95E-01	1.09	(0.71- 1.68)	6.86E-01	8.46E-01
PC(16:0_18:3) (a)	0.82	(0.56 - 1.21)	3.25E-01	5.26E-01	0.86	(0.57- 1.28)	4.55E-01	6.45E-01	1.07	(0.72- 1.58)	7.44E-01	8.65E-01
PC(16:0_18:3) (b)	0.77	(0.50 - 1.19)	2.38E-01	4.49E-01	0.82	(0.54- 1.23)	3.29E-01	5.30E-01	0.98	(0.64- 1.49)	9.18E-01	9.53E-01
PC(14:0_20:4)	0.49	(0.31 - 0.80)	<b>3.84E-03</b>	<b>3.60E-02</b>	0.54	(0.34- 0.84)	<b>6.51E-03</b>	<b>3.54E-02</b>	0.59	(0.38- 0.93)	<b>2.41E-02</b>	1.95E-01



PC(18:2_18:2)	0.89	(0.59 - 1.35)	5.90E-01	7.53E-01	0.53	(0.34- 0.82)	<b>4.44E-03</b>	<b>2.73E-02</b>	0.69	(0.46- 1.02)	6.10E-02	2.96E-01
PC(16:0_20:4)	1.02	(0.68 - 1.53)	9.08E-01	9.44E-01	0.86	(0.58- 1.27)	4.44E-01	6.37E-01	1.06	(0.70- 1.62)	7.79E-01	8.79E-01
PC(16:1_20:4)	0.90	(0.60 - 1.33)	5.85E-01	7.49E-01	0.70	(0.46- 1.07)	9.72E-02	2.16E-01	0.88	(0.58- 1.34)	5.60E-01	7.77E-01
PC(16:0_20:5)	0.75	(0.49 - 1.13)	1.69E-01	3.66E-01	0.71	(0.47- 1.07)	1.01E-01	2.21E-01	0.83	(0.55- 1.24)	3.63E-01	6.32E-01
PC(36:6)	0.67	(0.44 - 1.02)	6.25E-02	1.95E-01	0.65	(0.43- 0.97)	<b>3.59E-02</b>	1.11E-01	0.77	(0.51- 1.18)	2.30E-01	5.15E-01
PC(15-MHDA_20:4)	1.02	(0.68 - 1.53)	9.20E-01	9.53E-01	1.02	(0.69- 1.50)	9.33E-01	9.61E-01	1.23	(0.80- 1.88)	3.54E-01	6.31E-01
PC(17:0_20:4)	1.08	(0.72 - 1.60)	7.21E-01	8.38E-01	1.04	(0.70- 1.55)	8.59E-01	9.22E-01	1.21	(0.79- 1.85)	3.80E-01	6.33E-01
PC(15:0_22:6)	1.19	(0.80 - 1.76)	3.90E-01	5.91E-01	1.13	(0.75- 1.69)	5.56E-01	7.22E-01	1.36	(0.89- 2.06)	1.51E-01	4.46E-01
PC(38:2)	0.75	(0.50 - 1.12)	1.58E-01	3.46E-01	0.65	(0.43- 0.98)	<b>4.07E-02</b>	1.17E-01	0.92	(0.62- 1.38)	6.93E-01	8.47E-01
PC(18:0_20:3)	1.60	(0.99 - 2.59)	5.40E-02	1.74E-01	0.92	(0.62- 1.36)	6.62E-01	7.95E-01	1.15	(0.75- 1.77)	5.18E-01	7.48E-01
PC(38:3) (b)	0.99	(0.65 - 1.50)	9.46E-01	9.62E-01	0.83	(0.54- 1.28)	4.07E-01	6.09E-01	1.21	(0.79- 1.84)	3.77E-01	6.32E-01
PC(18:1_20:3)	0.93	(0.63 - 1.38)	7.29E-01	8.46E-01	1.11	(0.75- 1.64)	6.15E-01	7.64E-01	1.31	(0.86- 2.00)	2.05E-01	5.00E-01
PC(38:4) (b)	1.04	(0.70 - 1.56)	8.39E-01	9.05E-01	1.23	(0.83- 1.85)	3.04E-01	5.00E-01	1.63	(1.03- 2.57)	<b>3.71E-02</b>	2.47E-01
PC(18:0_20:4)	0.87	(0.58 - 1.31)	4.99E-01	6.81E-01	0.79	(0.53- 1.18)	2.54E-01	4.39E-01	1.03	(0.67- 1.57)	9.02E-01	9.43E-01
PC(38:5) (a)	0.89	(0.60 - 1.32)	5.68E-01	7.42E-01	0.90	(0.61- 1.32)	5.87E-01	7.45E-01	1.15	(0.76- 1.74)	5.18E-01	7.48E-01
PC(38:5) (b)	0.79	(0.52 - 1.18)	2.43E-01	4.51E-01	0.67	(0.45- 1.02)	6.33E-02	1.60E-01	0.82	(0.54- 1.23)	3.29E-01	6.02E-01
PC(38:6) (a)	0.34	(0.20 - 0.58)	<b>6.59E-05</b>	<b>7.42E-03</b>	0.40	(0.24- 0.64)	<b>1.72E-04</b>	<b>5.31E-03</b>	0.54	(0.34- 0.86)	<b>8.63E-03</b>	1.57E-01
PC(16:0_22:6)	1.15	(0.79 - 1.69)	4.67E-01	6.58E-01	1.04	(0.70- 1.54)	8.41E-01	9.08E-01	1.29	(0.86- 1.93)	2.14E-01	5.04E-01
PC(18:2_20:5)	0.39	(0.24 - 0.63)	<b>1.48E-04</b>	<b>1.27E-02</b>	0.37	(0.23- 0.61)	<b>7.68E-05</b>	<b>4.10E-03</b>	0.43	(0.27- 0.68)	<b>3.08E-04</b>	7.48E-02

PC(16:1_22:6)	0.78	(0.51 - 1.17)	2.29E-01	4.38E-01	0.74	(0.49- 1.12)	1.56E-01	3.11E-01	0.96	(0.64- 1.43)	8.24E-01	9.07E-01
PC(38:7) (c)	0.93	(0.60 - 1.45)	7.55E-01	8.50E-01	1.29	(0.85- 1.95)	2.27E-01	4.02E-01	1.55	(1.00- 2.39)	<b>4.85E-02</b>	2.60E-01
PC(39:5) (a)	1.11	(0.76 - 1.64)	5.84E-01	7.49E-01	1.00	(0.68- 1.48)	9.84E-01	9.86E-01	1.12	(0.75- 1.66)	5.82E-01	7.82E-01
PC(39:5) (b)	1.18	(0.79 - 1.75)	4.24E-01	6.18E-01	0.92	(0.62- 1.37)	6.94E-01	8.13E-01	1.34	(0.87- 2.06)	1.88E-01	4.91E-01
PC(15-MHDA_22:6)	1.60	(1.05 - 2.44)	<b>2.73E-02</b>	1.24E-01	0.98	(0.66- 1.46)	9.29E-01	9.59E-01	1.21	(0.80- 1.82)	3.70E-01	6.32E-01
PC(17:0_22:6)	1.16	(0.78 - 1.72)	4.69E-01	6.58E-01	1.14	(0.75- 1.72)	5.46E-01	7.17E-01	1.18	(0.78- 1.78)	4.23E-01	6.67E-01
PC(18:0_22:4)	1.05	(0.66 - 1.66)	8.40E-01	9.05E-01	0.90	(0.61- 1.34)	6.12E-01	7.64E-01	1.10	(0.71- 1.71)	6.67E-01	8.41E-01
PC(20:0_20:4)	0.79	(0.53 - 1.18)	2.52E-01	4.57E-01	0.60	(0.39- 0.94)	<b>2.43E-02</b>	8.33E-02	0.89	(0.60- 1.34)	5.81E-01	7.82E-01
PC(18:0_22:5) (n3)	0.93	(0.62 - 1.41)	7.32E-01	8.46E-01	0.86	(0.58- 1.28)	4.67E-01	6.58E-01	1.15	(0.75- 1.76)	5.19E-01	7.48E-01
PC(18:0_22:5) (n6)	1.20	(0.80 - 1.79)	3.84E-01	5.85E-01	ND	ND	ND	ND	ND	ND	ND	ND
PC(18:0_22:6)	1.13	(0.76 - 1.66)	5.53E-01	7.34E-01	1.03	(0.69- 1.53)	8.83E-01	9.27E-01	1.26	(0.84- 1.90)	2.67E-01	5.29E-01
PC(40:7) (a)	0.49	(0.31 - 0.79)	<b>3.12E-03</b>	<b>3.31E-02</b>	0.46	(0.29- 0.74)	<b>1.17E-03</b>	<b>1.31E-02</b>	0.68	(0.44- 1.06)	8.73E-02	3.52E-01
PC(18:1_22:6) (a)	0.71	(0.47 - 1.06)	9.51E-02	2.53E-01	0.73	(0.48- 1.10)	1.36E-01	2.81E-01	0.89	(0.60- 1.32)	5.66E-01	7.77E-01
PC(18:1_22:6) (b)	0.63	(0.41 - 0.95)	<b>2.94E-02</b>	1.27E-01	ND	ND	ND	ND	ND	ND	ND	ND
PC(40:8)	0.39	(0.24 - 0.64)	<b>2.02E-04</b>	<b>1.30E-02</b>	0.40	(0.24- 0.64)	<b>1.77E-04</b>	<b>5.31E-03</b>	0.56	(0.35- 0.89)	<b>1.43E-02</b>	1.73E-01
PC(O-16:0/16:0)	1.64	(1.05 - 2.54)	<b>2.81E-02</b>	1.24E-01	1.22	(0.80- 1.88)	3.59E-01	5.62E-01	1.67	(1.09- 2.57)	<b>1.95E-02</b>	1.94E-01
PC(O-32:1)	1.32	(0.85 - 2.03)	2.13E-01	4.22E-01	1.12	(0.73- 1.71)	6.16E-01	7.64E-01	1.50	(0.97- 2.31)	6.63E-02	3.04E-01
PC(O-32:2)	0.57	(0.36 - 0.91)	<b>1.77E-02</b>	9.42E-02	0.47	(0.29- 0.79)	<b>4.02E-03</b>	<b>2.65E-02</b>	0.60	(0.39- 0.93)	<b>2.35E-02</b>	1.94E-01
PC(O-34:2)	0.91	(0.61 - 1.36)	6.49E-01	7.99E-01	0.54	(0.34- 0.85)	<b>8.27E-03</b>	<b>4.01E-02</b>	0.72	(0.48- 1.08)	1.10E-01	3.86E-01

PC(O-34:4)	0.67	(0.42 - 1.06)	8.67E-02	2.36E-01	ND	ND	ND	ND	ND	ND	ND	ND
PC(O-35:4)	0.63	(0.42 - 0.96)	<b>3.13E-02</b>	1.27E-01	0.75	(0.50- 1.13)	1.73E-01	3.39E-01	0.94	(0.63- 1.41)	7.72E-01	8.76E-01
PC(O-36:0)	1.05	(0.71 - 1.54)	8.12E-01	8.90E-01	0.95	(0.63- 1.44)	8.17E-01	8.93E-01	1.21	(0.81- 1.81)	3.55E-01	6.31E-01
PC(O-18:0/18:1)	1.20	(0.81 - 1.77)	3.70E-01	5.67E-01	1.07	(0.73- 1.59)	7.21E-01	8.20E-01	1.33	(0.87- 2.02)	1.86E-01	4.91E-01
PC(O-18:0/18:2)	ND	ND	ND	ND	0.71	(0.46- 1.09)	1.18E-01	2.49E-01	0.94	(0.63- 1.40)	7.62E-01	8.76E-01
PC(O-18:1/18:1)	ND	ND	ND	ND	0.76	(0.48- 1.22)	2.55E-01	4.39E-01	1.07	(0.72- 1.59)	7.39E-01	8.61E-01
PC(O-18:1/18:2)	0.62	(0.40 - 0.96)	<b>3.21E-02</b>	1.28E-01	0.59	(0.38- 0.93)	<b>2.26E-02</b>	7.96E-02	0.85	(0.58- 1.26)	4.26E-01	6.67E-01
PC(O-16:0/20:3)	1.01	(0.67 - 1.52)	9.61E-01	9.72E-01	0.88	(0.59- 1.31)	5.27E-01	7.00E-01	1.08	(0.71- 1.64)	7.20E-01	8.48E-01
PC(O-16:0/20:4)	0.85	(0.58 - 1.25)	4.13E-01	6.13E-01	0.76	(0.51- 1.14)	1.88E-01	3.53E-01	1.13	(0.74- 1.73)	5.69E-01	7.77E-01
PC(O-36:5)	0.92	(0.61 - 1.39)	6.94E-01	8.27E-01	0.82	(0.54- 1.23)	3.33E-01	5.33E-01	1.08	(0.71- 1.63)	7.17E-01	8.48E-01
PC(O-18:0/20:4)	1.06	(0.70 - 1.61)	7.70E-01	8.59E-01	0.93	(0.62- 1.38)	7.07E-01	8.18E-01	1.28	(0.83- 1.98)	2.55E-01	5.28E-01
PC(O-38:5)	0.85	(0.56 - 1.29)	4.36E-01	6.29E-01	0.76	(0.51- 1.15)	1.96E-01	3.64E-01	1.08	(0.71- 1.62)	7.24E-01	8.48E-01
PC(O-16:0/22:6)	0.97	(0.64 - 1.45)	8.72E-01	9.26E-01	0.86	(0.57- 1.30)	4.69E-01	6.58E-01	1.13	(0.75- 1.69)	5.64E-01	7.77E-01
PC(O-40:5)	1.14	(0.75 - 1.72)	5.46E-01	7.26E-01	0.93	(0.62- 1.39)	7.35E-01	8.26E-01	1.31	(0.86- 2.01)	2.08E-01	5.01E-01
PC(O-18:0/22:6)	0.97	(0.65 - 1.44)	8.77E-01	9.27E-01	0.93	(0.61- 1.41)	7.21E-01	8.20E-01	1.14	(0.76- 1.70)	5.23E-01	7.48E-01
PC(O-40:7) (a)	0.93	(0.62 - 1.40)	7.36E-01	8.46E-01	ND	ND	ND	ND	ND	ND	ND	ND
PC(O-40:7) (b)	1.07	(0.72 - 1.59)	7.49E-01	8.50E-01	ND	ND	ND	ND	ND	ND	ND	ND
PC(O-40:7)	ND	ND	ND	ND	0.75	(0.49- 1.15)	1.87E-01	3.53E-01	0.92	(0.61- 1.38)	6.89E-01	8.47E-01
PC(P-16:0/14:0)	0.74	(0.48 - 1.14)	1.72E-01	3.66E-01	0.84	(0.55- 1.28)	4.11E-01	6.13E-01	0.93	(0.63- 1.38)	7.23E-01	8.48E-01

PC(P-16:0/16:0)	1.09	(0.72 - 1.66)	6.70E-01	8.10E-01	0.92	(0.59- 1.43)	7.19E-01	8.20E-01	1.16	(0.76- 1.75)	4.95E-01	7.32E-01
PC(P-16:0/16:1)	0.96	(0.61 - 1.50)	8.56E-01	9.17E-01	0.88	(0.56- 1.37)	5.66E-01	7.28E-01	1.18	(0.77- 1.81)	4.37E-01	6.75E-01
PC(P-16:0/18:1)	0.74	(0.46 - 1.20)	2.25E-01	4.37E-01	0.73	(0.45- 1.16)	1.82E-01	3.51E-01	0.95	(0.63- 1.44)	8.08E-01	8.97E-01
PC(P-16:0/18:2)	0.56	(0.35 - 0.89)	<b>1.34E-02</b>	7.70E-02	0.53	(0.33- 0.84)	<b>7.55E-03</b>	<b>3.70E-02</b>	0.72	(0.47- 1.10)	1.25E-01	4.06E-01
PC(P-16:0/18:3)	0.75	(0.49 - 1.14)	1.75E-01	3.69E-01	0.64	(0.41- 0.98)	<b>3.96E-02</b>	1.15E-01	0.75	(0.50- 1.13)	1.69E-01	4.66E-01
PC(P-15:0/20:4) (a)	1.05	(0.72 - 1.54)	7.97E-01	8.79E-01	0.86	(0.58- 1.29)	4.73E-01	6.58E-01	1.09	(0.72- 1.65)	6.75E-01	8.41E-01
PC(P-15:0/20:4) (b)	0.89	(0.60 - 1.32)	5.55E-01	7.34E-01	0.89	(0.60- 1.32)	5.64E-01	7.28E-01	0.97	(0.65- 1.44)	8.74E-01	9.33E-01
PC(P-18:1/18:1)	0.80	(0.52 - 1.22)	3.03E-01	5.08E-01	ND	ND	ND	ND	ND	ND	ND	ND
PC(P-18:0/18:2)	0.81	(0.54 - 1.23)	3.25E-01	5.26E-01	0.57	(0.36- 0.91)	<b>1.78E-02</b>	6.66E-02	0.78	(0.52- 1.17)	2.30E-01	5.15E-01
PC(P-36:3)	0.89	(0.60 - 1.33)	5.76E-01	7.48E-01	0.77	(0.51- 1.18)	2.32E-01	4.08E-01	1.02	(0.68- 1.53)	9.38E-01	9.64E-01
PC(P-16:0/20:4)	0.93	(0.62 - 1.41)	7.43E-01	8.48E-01	0.80	(0.53- 1.20)	2.76E-01	4.67E-01	1.07	(0.71- 1.61)	7.58E-01	8.76E-01
PC(P-16:0/20:5)	0.67	(0.43 - 1.03)	6.88E-02	2.05E-01	0.66	(0.43- 1.03)	6.61E-02	1.64E-01	0.79	(0.52- 1.19)	2.53E-01	5.28E-01
PC(P-17:0/20:4) (a)	1.12	(0.75 - 1.68)	5.78E-01	7.48E-01	0.99	(0.67- 1.47)	9.75E-01	9.79E-01	1.25	(0.82- 1.90)	2.99E-01	5.65E-01
PC(P-17:0/20:4) (b)	0.99	(0.66 - 1.48)	9.59E-01	9.72E-01	0.84	(0.56- 1.27)	4.14E-01	6.13E-01	1.06	(0.70- 1.59)	7.90E-01	8.83E-01
PC(P-18:0/20:4)	0.94	(0.63 - 1.43)	7.84E-01	8.68E-01	0.85	(0.56- 1.29)	4.41E-01	6.37E-01	1.11	(0.74- 1.68)	6.08E-01	8.12E-01
PC(P-38:5) (a)	0.96	(0.63 - 1.47)	8.58E-01	9.17E-01	ND	ND	ND	ND	ND	ND	ND	ND
PC(P-38:5) (b)	0.88	(0.59 - 1.32)	5.41E-01	7.24E-01	ND	ND	ND	ND	ND	ND	ND	ND
PC(P-38:5)	ND	ND	ND	ND	0.85	(0.55- 1.30)	4.44E-01	6.37E-01	1.13	(0.74- 1.71)	5.71E-01	7.78E-01
PC(P-16:0/22:6)	0.86	(0.57 - 1.30)	4.84E-01	6.71E-01	0.75	(0.49- 1.16)	1.93E-01	3.61E-01	1.01	(0.68- 1.51)	9.44E-01	9.67E-01

PC(P-20:0/20:4)	1.14	(0.75 - 1.72)	5.46E-01	7.26E-01	0.94	(0.63- 1.41)	7.72E-01	8.55E-01	1.32	(0.86- 2.02)	2.03E-01	5.00E-01
PC(P-18:0/22:5)	0.93	(0.61 - 1.40)	7.16E-01	8.38E-01	0.82	(0.54- 1.25)	3.53E-01	5.53E-01	1.05	(0.69- 1.58)	8.33E-01	9.07E-01
PC(P-18:0/22:6)	0.85	(0.55 - 1.29)	4.35E-01	6.29E-01	0.74	(0.47- 1.15)	1.81E-01	3.51E-01	0.94	(0.63- 1.41)	7.80E-01	8.79E-01
PC(P-18:1/22:6)	0.79	(0.52 - 1.21)	2.88E-01	4.98E-01	0.82	(0.53- 1.26)	3.64E-01	5.63E-01	1.11	(0.74- 1.66)	6.14E-01	8.13E-01
LPC(14:0) [sn2]	0.42	(0.26 - 0.69)	<b>5.93E-04</b>	<b>1.53E-02</b>	0.44	(0.27- 0.71)	<b>8.44E-04</b>	<b>1.27E-02</b>	0.68	(0.44- 1.06)	8.64E-02	3.52E-01
LPC(14:0) [sn1]	0.46	(0.29 - 0.74)	<b>1.15E-03</b>	<b>1.95E-02</b>	0.46	(0.29- 0.74)	<b>1.21E-03</b>	<b>1.32E-02</b>	0.75	(0.49- 1.15)	1.80E-01	4.81E-01
LPC(15:0) [sn2]	0.70	(0.46 - 1.07)	9.91E-02	2.59E-01	0.68	(0.45- 1.03)	7.05E-02	1.72E-01	0.99	(0.66- 1.48)	9.64E-01	9.74E-01
LPC(15:0) [sn1]	0.84	(0.56 - 1.26)	3.88E-01	5.89E-01	0.77	(0.51- 1.17)	2.21E-01	3.96E-01	1.19	(0.79- 1.78)	4.07E-01	6.54E-01
LPC(16:0) [sn2]	0.60	(0.38 - 0.93)	<b>2.37E-02</b>	1.18E-01	0.49	(0.31- 0.80)	<b>3.69E-03</b>	<b>2.53E-02</b>	0.97	(0.65- 1.45)	8.92E-01	9.41E-01
LPC(16:0) [sn1]	0.60	(0.39 - 0.95)	<b>2.80E-02</b>	1.24E-01	0.52	(0.33- 0.83)	<b>5.33E-03</b>	<b>3.08E-02</b>	1.00	(0.67- 1.50)	9.84E-01	9.86E-01
LPC(16:1) [sn2]	0.60	(0.38 - 0.96)	<b>3.44E-02</b>	1.34E-01	0.59	(0.37- 0.94)	<b>2.52E-02</b>	8.46E-02	0.91	(0.60- 1.38)	6.47E-01	8.33E-01
LPC(16:1) [sn1]	0.59	(0.38 - 0.94)	<b>2.48E-02</b>	1.18E-01	0.59	(0.37- 0.93)	<b>2.28E-02</b>	7.96E-02	0.93	(0.61- 1.41)	7.24E-01	8.48E-01
LPC(15-MHDA) [sn2]	0.79	(0.53 - 1.17)	2.39E-01	4.49E-01	0.62	(0.41- 0.95)	<b>2.84E-02</b>	9.32E-02	0.92	(0.61- 1.36)	6.65E-01	8.41E-01
LPC(15-MHDA) [sn1] / LPC(17:0) [sn2]	0.72	(0.48 - 1.08)	1.16E-01	2.86E-01	0.68	(0.44- 1.03)	6.87E-02	1.68E-01	0.96	(0.65- 1.43)	8.53E-01	9.18E-01
LPC(17:0) [sn1]	0.60	(0.38 - 0.95)	<b>2.75E-02</b>	1.24E-01	0.53	(0.33- 0.84)	<b>6.34E-03</b>	<b>3.50E-02</b>	0.92	(0.62- 1.37)	6.82E-01	8.46E-01
LPC(17:1 ) [sn2] (a)	0.50	(0.31 - 0.80)	<b>3.41E-03</b>	<b>3.31E-02</b>	0.46	(0.29- 0.74)	<b>1.40E-03</b>	<b>1.37E-02</b>	0.86	(0.57- 1.30)	4.69E-01	7.11E-01
LPC(17:1) [sn1] (a) / LPC(17:1) [sn2] (b)	0.51	(0.32 - 0.81)	<b>4.03E-03</b>	<b>3.64E-02</b>	0.48	(0.30- 0.76)	<b>1.79E-03</b>	<b>1.51E-02</b>	0.83	(0.55- 1.25)	3.72E-01	6.32E-01
LPC(17:1) [sn1] (b)	0.79	(0.53 - 1.17)	2.34E-01	4.45E-01	0.72	(0.49- 1.06)	9.50E-02	2.12E-01	0.94	(0.64- 1.40)	7.70E-01	8.76E-01
LPC(18:0) [sn2]	0.43	(0.26 - 0.69)	<b>5.71E-04</b>	<b>1.53E-02</b>	0.35	(0.21- 0.59)	<b>7.14E-05</b>	<b>4.10E-03</b>	0.74	(0.49- 1.13)	1.61E-01	4.57E-01



LPC(18:0) [sn1]	0.45	(0.28 - 0.73)	<b>1.18E-03</b>	<b>1.95E-02</b>	0.35	(0.21-0.59)	<b>6.83E-05</b>	<b>4.10E-03</b>	0.77	(0.51-1.17)	2.18E-01	5.05E-01
LPC(18:1) [sn2]	0.45	(0.28 - 0.74)	<b>1.37E-03</b>	<b>2.12E-02</b>	0.40	(0.24-0.66)	<b>4.02E-04</b>	<b>9.18E-03</b>	0.78	(0.51-1.17)	2.30E-01	5.15E-01
LPC(18:1) [sn1]	0.44	(0.27 - 0.71)	<b>9.87E-04</b>	<b>1.92E-02</b>	0.37	(0.22-0.63)	<b>2.13E-04</b>	<b>5.69E-03</b>	0.72	(0.47-1.09)	1.17E-01	3.97E-01
LPC(18:2) [sn2]	0.46	(0.29 - 0.73)	<b>9.95E-04</b>	<b>1.92E-02</b>	0.33	(0.20-0.57)	<b>5.41E-05</b>	<b>4.10E-03</b>	0.78	(0.52-1.19)	2.47E-01	5.28E-01
LPC(18:2) [sn1]	0.42	(0.26 - 0.69)	<b>4.98E-04</b>	<b>1.53E-02</b>	0.36	(0.21-0.61)	<b>1.40E-04</b>	<b>4.81E-03</b>	0.66	(0.43-1.01)	5.82E-02	2.91E-01
LPC(18:3)	0.35	(0.21 - 0.58)	<b>5.42E-05</b>	<b>7.42E-03</b>	0.32	(0.19-0.55)	<b>3.84E-05</b>	<b>4.10E-03</b>	0.59	(0.38-0.93)	<b>2.36E-02</b>	1.94E-01
LPC(20:0) [sn2]	0.32	(0.19 - 0.55)	<b>3.31E-05</b>	<b>7.42E-03</b>	0.25	(0.14-0.44)	<b>3.42E-06</b>	<b>8.21E-04</b>	0.59	(0.38-0.92)	<b>1.87E-02</b>	1.94E-01
LPC(20:0) [sn1]	0.33	(0.20 - 0.56)	<b>3.23E-05</b>	<b>7.42E-03</b>	0.24	(0.13-0.44)	<b>3.04E-06</b>	<b>8.21E-04</b>	0.58	(0.37-0.91)	<b>1.72E-02</b>	1.93E-01
LPC(20:1) [sn2]	0.44	(0.28 - 0.70)	<b>5.83E-04</b>	<b>1.53E-02</b>	0.38	(0.23-0.62)	<b>1.35E-04</b>	<b>4.81E-03</b>	0.76	(0.51-1.13)	1.78E-01	4.77E-01
LPC(20:1) [sn1]	0.43	(0.26 - 0.69)	<b>4.96E-04</b>	<b>1.53E-02</b>	0.37	(0.23-0.62)	<b>1.13E-04</b>	<b>4.81E-03</b>	0.76	(0.51-1.13)	1.77E-01	4.77E-01
LPC(20:2) [sn2]	0.52	(0.33 - 0.82)	<b>5.18E-03</b>	<b>4.23E-02</b>	0.42	(0.26-0.67)	<b>3.05E-04</b>	<b>7.32E-03</b>	0.78	(0.52-1.18)	2.41E-01	5.25E-01
LPC(20:2) [sn1]	0.46	(0.29 - 0.73)	<b>1.08E-03</b>	<b>1.92E-02</b>	0.36	(0.22-0.60)	<b>6.99E-05</b>	<b>4.10E-03</b>	0.69	(0.45-1.05)	7.96E-02	3.36E-01
LPC(20:3) [sn2]	0.67	(0.44 - 1.02)	6.21E-02	1.95E-01	0.60	(0.39-0.92)	<b>1.90E-02</b>	7.03E-02	1.01	(0.67-1.54)	9.45E-01	9.67E-01
LPC(20:3) [sn1]	0.64	(0.42 - 0.98)	<b>3.85E-02</b>	1.42E-01	0.53	(0.34-0.84)	<b>6.86E-03</b>	<b>3.54E-02</b>	0.77	(0.51-1.18)	2.29E-01	5.15E-01
LPC(20:4) [sn2]	0.65	(0.43 - 0.98)	<b>3.89E-02</b>	1.42E-01	0.59	(0.38-0.91)	<b>1.67E-02</b>	6.43E-02	0.95	(0.63-1.44)	8.12E-01	8.99E-01
LPC(20:4) [sn1]	0.66	(0.43 - 0.99)	<b>4.45E-02</b>	1.56E-01	0.57	(0.37-0.88)	<b>1.10E-02</b>	<b>4.78E-02</b>	0.83	(0.54-1.26)	3.77E-01	6.32E-01
LPC(20:5) [sn2]	0.49	(0.31 - 0.77)	<b>2.20E-03</b>	<b>2.91E-02</b>	0.48	(0.30-0.76)	<b>1.66E-03</b>	<b>1.48E-02</b>	0.74	(0.49-1.13)	1.62E-01	4.57E-01
LPC(20:5) [sn1]	0.51	(0.32 - 0.80)	<b>3.35E-03</b>	<b>3.31E-02</b>	0.47	(0.30-0.75)	<b>1.53E-03</b>	<b>1.45E-02</b>	0.67	(0.44-1.04)	7.27E-02	3.21E-01
LPC(22:0) [sn2]	0.40	(0.24 - 0.68)	<b>6.32E-04</b>	<b>1.53E-02</b>	0.38	(0.23-0.63)	<b>2.03E-04</b>	<b>5.69E-03</b>	0.64	(0.41-0.98)	<b>4.14E-02</b>	2.52E-01

LPC(22:0) [sn1]	0.42	(0.26 - 0.69)	<b>6.54E-04</b>	<b>1.53E-02</b>	0.35	(0.21-0.58)	<b>5.43E-05</b>	<b>4.10E-03</b>	0.62	(0.39-0.97)	<b>3.55E-02</b>	2.44E-01
LPC(22:1) [sn2]	0.78	(0.50 - 1.20)	2.59E-01	4.66E-01	ND	ND	ND	ND	ND	ND	ND	ND
LPC(22:1) [sn1]	0.49	(0.30 - 0.81)	<b>4.73E-03</b>	<b>3.99E-02</b>	ND	ND	ND	ND	ND	ND	ND	ND
LPC(22:1)	ND	ND	ND	ND	0.40	(0.24-0.67)	<b>4.69E-04</b>	<b>9.61E-03</b>	0.84	(0.57-1.25)	3.87E-01	6.42E-01
LPC(22:4) [sn2]	0.73	(0.48 - 1.09)	1.25E-01	3.00E-01	0.65	(0.42-1.00)	<b>4.77E-02</b>	1.31E-01	1.09	(0.72-1.64)	6.94E-01	8.47E-01
LPC(22:4) [sn1]	0.71	(0.47 - 1.08)	1.12E-01	2.80E-01	0.65	(0.42-1.01)	5.33E-02	1.39E-01	0.90	(0.59-1.36)	6.22E-01	8.21E-01
LPC(22:5) [sn2] (n3)	0.73	(0.48 - 1.12)	1.47E-01	3.29E-01	0.63	(0.41-0.97)	<b>3.73E-02</b>	1.12E-01	1.08	(0.71-1.63)	7.17E-01	8.48E-01
LPC(22:5) [sn1] (n3)/LPC(22:5) [sn2] (n6)	0.78	(0.51 - 1.17)	2.27E-01	4.38E-01	0.63	(0.41-0.98)	<b>3.93E-02</b>	1.15E-01	0.88	(0.58-1.32)	5.28E-01	7.48E-01
LPC(22:5) [sn1] (n6)	0.86	(0.57 - 1.28)	4.52E-01	6.42E-01	0.80	(0.52-1.21)	2.90E-01	4.87E-01	1.07	(0.70-1.62)	7.67E-01	8.76E-01
LPC(22:6) [sn2]	0.80	(0.54 - 1.18)	2.61E-01	4.68E-01	0.65	(0.42-0.99)	<b>4.51E-02</b>	1.27E-01	1.04	(0.69-1.57)	8.38E-01	9.09E-01
LPC(22:6) [sn1]	0.75	(0.50 - 1.12)	1.55E-01	3.41E-01	0.63	(0.41-0.97)	<b>3.64E-02</b>	1.11E-01	0.86	(0.57-1.29)	4.57E-01	6.98E-01
LPC(24:0) [sn2]	0.52	(0.32 - 0.83)	<b>6.82E-03</b>	<b>4.88E-02</b>	0.35	(0.21-0.60)	<b>1.26E-04</b>	<b>4.81E-03</b>	0.70	(0.46-1.06)	9.36E-02	3.57E-01
LPC(24:0) [sn1]	0.52	(0.32 - 0.83)	<b>5.68E-03</b>	<b>4.43E-02</b>	0.35	(0.21-0.60)	<b>9.32E-05</b>	<b>4.47E-03</b>	0.74	(0.49-1.13)	1.63E-01	4.58E-01
LPC(26:0) [sn2]	0.76	(0.50 - 1.16)	2.00E-01	4.08E-01	0.46	(0.28-0.74)	<b>1.37E-03</b>	<b>1.37E-02</b>	0.69	(0.45-1.06)	8.92E-02	3.52E-01
LPC(26:0) [sn1]	0.69	(0.45 - 1.05)	8.44E-02	2.34E-01	0.54	(0.34-0.86)	<b>9.63E-03</b>	<b>4.31E-02</b>	0.69	(0.45-1.06)	9.15E-02	3.53E-01
LPC(O-16:0)	0.56	(0.35 - 0.89)	<b>1.43E-02</b>	8.09E-02	0.51	(0.32-0.81)	<b>4.27E-03</b>	<b>2.70E-02</b>	0.96	(0.64-1.44)	8.45E-01	9.13E-01
LPC(O-18:0)	0.61	(0.40 - 0.96)	<b>3.08E-02</b>	1.27E-01	0.56	(0.36-0.86)	<b>8.43E-03</b>	<b>4.01E-02</b>	0.96	(0.63-1.44)	8.32E-01	9.07E-01
LPC(O-18:1)	0.58	(0.37 - 0.90)	<b>1.62E-02</b>	8.96E-02	0.55	(0.35-0.86)	<b>9.39E-03</b>	<b>4.31E-02</b>	0.94	(0.64-1.40)	7.78E-01	8.79E-01
LPC(O-20:1)	0.55	(0.36 - 0.85)	<b>7.33E-03</b>	5.10E-02	0.41	(0.26-0.66)	<b>2.47E-04</b>	<b>6.23E-03</b>	0.77	(0.52-1.15)	2.06E-01	5.00E-01

LPC(O-22:0)	0.79	(0.53 - 1.20)	2.67E-01	4.73E-01	0.62	(0.41-0.94)	<b>2.25E-02</b>	7.96E-02	1.09	(0.73-1.64)	6.74E-01	8.41E-01
LPC(O-22:1)	0.70	(0.47 - 1.06)	9.59E-02	2.53E-01	0.67	(0.45-1.00)	5.13E-02	1.35E-01	1.05	(0.71-1.55)	8.15E-01	9.00E-01
LPC(O-24:0)	0.97	(0.66 - 1.45)	8.95E-01	9.35E-01	0.71	(0.47-1.07)	1.00E-01	2.20E-01	1.14	(0.76-1.71)	5.27E-01	7.48E-01
LPC(O-24:1)	0.88	(0.60 - 1.31)	5.32E-01	7.18E-01	0.72	(0.49-1.07)	1.08E-01	2.33E-01	1.14	(0.77-1.70)	5.07E-01	7.41E-01
LPC(O-24:2)	0.72	(0.48 - 1.07)	1.07E-01	2.70E-01	0.66	(0.44-0.99)	<b>4.68E-02</b>	1.31E-01	1.02	(0.69-1.51)	9.11E-01	9.48E-01
LPC(P-16:0)	0.47	(0.28 - 0.77)	<b>2.85E-03</b>	<b>3.26E-02</b>	0.44	(0.27-0.72)	<b>1.05E-03</b>	<b>1.31E-02</b>	0.81	(0.54-1.22)	3.18E-01	5.90E-01
LPC(P-18:0)	0.54	(0.33 - 0.87)	<b>1.08E-02</b>	6.68E-02	0.43	(0.26-0.71)	<b>1.08E-03</b>	<b>1.31E-02</b>	0.76	(0.50-1.17)	2.16E-01	5.05E-01
LPC(P-18:1)	0.64	(0.41 - 1.00)	<b>4.98E-02</b>	1.65E-01	0.61	(0.39-0.95)	<b>2.80E-02</b>	9.27E-02	0.94	(0.63-1.40)	7.55E-01	8.74E-01
LPC(P-20:0)	0.59	(0.38 - 0.92)	<b>2.00E-02</b>	1.03E-01	0.46	(0.29-0.73)	<b>9.00E-04</b>	<b>1.30E-02</b>	0.80	(0.54-1.20)	2.85E-01	5.54E-01
PE(16:0_16:0)	1.88	(1.20 - 2.95)	<b>5.77E-03</b>	<b>4.44E-02</b>	1.49	(0.99-2.24)	5.30E-02	1.39E-01	1.98	(1.26-3.13)	<b>3.25E-03</b>	1.03E-01
PE(16:0_16:1)	1.66	(1.04 - 2.66)	<b>3.30E-02</b>	1.30E-01	1.76	(1.13-2.73)	<b>1.27E-02</b>	5.26E-02	2.05	(1.27-3.33)	<b>3.58E-03</b>	1.03E-01
PE(16:0_18:1)	1.92	(1.24 - 2.97)	<b>3.29E-03</b>	<b>3.31E-02</b>	1.95	(1.27-3.00)	<b>2.19E-03</b>	<b>1.72E-02</b>	2.22	(1.38-3.58)	<b>1.09E-03</b>	8.01E-02
PE(16:0_18:2)	2.11	(1.34 - 3.31)	<b>1.23E-03</b>	<b>1.97E-02</b>	2.18	(1.40-3.40)	<b>5.76E-04</b>	<b>1.02E-02</b>	2.25	(1.38-3.66)	<b>1.16E-03</b>	8.01E-02
PE(16:1_18:2)	1.00	(0.67 - 1.50)	9.85E-01	9.85E-01	ND	ND	ND	ND	ND	ND	ND	ND
PE(16:0_18:3) (a)	1.77	(1.16 - 2.70)	<b>8.21E-03</b>	5.49E-02	ND	ND	ND	ND	ND	ND	ND	ND
PE(16:0_18:3) (b)	1.47	(0.96 - 2.25)	7.67E-02	2.22E-01	ND	ND	ND	ND	ND	ND	ND	ND
PE(34:3)	ND	ND	ND	ND	1.62	(1.06-2.46)	<b>2.46E-02</b>	8.33E-02	1.82	(1.14-2.91)	<b>1.28E-02</b>	1.71E-01
PE(15-MHDA_18:1)	1.15	(0.77 - 1.71)	4.99E-01	6.81E-01	1.45	(0.95-2.22)	8.82E-02	2.00E-01	1.67	(1.07-2.59)	<b>2.33E-02</b>	1.94E-01
PE(17:0_18:1)	1.80	(1.12 - 2.89)	<b>1.49E-02</b>	8.32E-02	1.85	(1.19-2.86)	<b>5.93E-03</b>	<b>3.35E-02</b>	2.00	(1.24-3.24)	<b>4.61E-03</b>	1.06E-01

PE(15-MHDA_18:2)	1.34	(0.89 - 2.04)	1.62E-01	3.52E-01	1.74	(1.12- 2.71)	<b>1.32E-02</b>	5.28E-02	1.93	(1.18- 3.17)	<b>8.72E-03</b>	1.57E-01
PE(17:0_18:2)	1.77	(1.15 - 2.73)	<b>9.83E-03</b>	6.33E-02	1.74	(1.01- 3.00)	<b>4.79E-02</b>	1.31E-01	2.09	(1.27- 3.42)	<b>3.55E-03</b>	1.03E-01
PE(36:0)	1.34	(0.88 - 2.03)	1.73E-01	3.66E-01	ND	ND	ND	ND	0.98	(0.64- 1.49)	9.09E-01	9.48E-01
PE(18:0_18:1)	1.13	(0.75 - 1.69)	5.64E-01	7.40E-01	1.15	(0.77- 1.70)	4.99E-01	6.78E-01	1.31	(0.86- 2.01)	2.13E-01	5.04E-01
PE(18:1_18:1)	1.27	(0.85 - 1.89)	2.38E-01	4.49E-01	0.97	(0.65- 1.45)	8.80E-01	9.27E-01	1.07	(0.71- 1.59)	7.52E-01	8.73E-01
PE(18:0_18:2)	1.58	(1.03 - 2.42)	<b>3.57E-02</b>	1.37E-01	1.71	(1.12- 2.62)	<b>1.31E-02</b>	5.27E-02	1.77	(1.12- 2.80)	<b>1.43E-02</b>	1.73E-01
PE(18:1_18:2)	0.92	(0.62 - 1.36)	6.65E-01	8.10E-01	1.03	(0.69- 1.54)	8.97E-01	9.40E-01	1.08	(0.72- 1.62)	7.12E-01	8.48E-01
PE(16:0_20:3)	1.92	(1.24 - 2.98)	<b>3.61E-03</b>	<b>3.44E-02</b>	2.21	(1.40- 3.49)	<b>6.77E-04</b>	<b>1.16E-02</b>	2.17	(1.33- 3.56)	<b>2.03E-03</b>	9.85E-02
PE(16:0_20:4)	1.82	(1.18 - 2.81)	<b>6.97E-03</b>	<b>4.92E-02</b>	2.01	(1.30- 3.10)	<b>1.65E-03</b>	<b>1.48E-02</b>	2.33	(1.40- 3.85)	<b>1.03E-03</b>	8.01E-02
PE(16:1_20:4)	0.94	(0.62 - 1.40)	7.49E-01	8.50E-01	1.10	(0.74- 1.64)	6.40E-01	7.84E-01	1.31	(0.85- 2.01)	2.24E-01	5.15E-01
PE(16:0_20:5)	1.25	(0.83 - 1.87)	2.79E-01	4.87E-01	1.30	(0.87- 1.93)	2.05E-01	3.78E-01	1.40	(0.91- 2.14)	1.21E-01	4.00E-01
PE(15-MHDA_20:4)	1.42	(0.94 - 2.13)	9.16E-02	2.46E-01	1.87	(1.17- 3.00)	<b>9.43E-03</b>	<b>4.31E-02</b>	1.90	(1.19- 3.02)	<b>6.68E-03</b>	1.35E-01
PE(17:0_20:4)	2.03	(1.24 - 3.33)	<b>4.87E-03</b>	<b>4.04E-02</b>	2.30	(1.42- 3.73)	<b>7.43E-04</b>	<b>1.19E-02</b>	2.25	(1.35- 3.75)	<b>1.85E-03</b>	9.85E-02
PE(18:0_20:3) (a)	1.81	(1.13 - 2.91)	<b>1.32E-02</b>	7.70E-02	1.95	(1.26- 3.03)	<b>2.95E-03</b>	<b>2.11E-02</b>	1.93	(1.17- 3.16)	<b>9.40E-03</b>	1.57E-01
PE(18:0_20:3) (b)	1.03	(0.69 - 1.53)	8.84E-01	9.31E-01	1.10	(0.74- 1.63)	6.49E-01	7.91E-01	1.26	(0.83- 1.92)	2.76E-01	5.42E-01
PE(18:0_20:4)	1.60	(1.05 - 2.45)	<b>2.79E-02</b>	1.24E-01	1.92	(1.24- 2.97)	<b>3.29E-03</b>	<b>2.32E-02</b>	2.05	(1.26- 3.33)	<b>3.60E-03</b>	1.03E-01
PE(38:5) (a)	1.20	(0.81 - 1.78)	3.59E-01	5.61E-01	1.46	(0.97- 2.18)	6.71E-02	1.66E-01	1.58	(1.02- 2.44)	<b>4.12E-02</b>	2.52E-01
PE(38:5) (b)	1.45	(0.95 - 2.20)	8.26E-02	2.31E-01	1.45	(0.97- 2.17)	7.32E-02	1.73E-01	1.72	(1.08- 2.74)	<b>2.21E-02</b>	1.94E-01
PE(16:0_22:6)	2.24	(1.39 - 3.63)	<b>1.01E-03</b>	<b>1.92E-02</b>	2.22	(1.42- 3.48)	<b>4.80E-04</b>	<b>9.61E-03</b>	2.44	(1.46- 4.09)	<b>6.77E-04</b>	8.01E-02

PE(15-MHDA_22:6)	1.56	(0.99 - 2.44)	5.34E-02	1.73E-01	1.74	(1.12- 2.71)	<b>1.44E-02</b>	5.73E-02	1.64	(1.03- 2.61)	<b>3.89E-02</b>	2.52E-01
PE(17:0_22:6)	1.99	(1.23 - 3.20)	<b>4.72E-03</b>	<b>3.99E-02</b>	2.21	(1.36- 3.60)	<b>1.33E-03</b>	<b>1.37E-02</b>	2.24	(1.29- 3.86)	<b>3.98E-03</b>	1.06E-01
PE(18:0_22:4)	1.10	(0.73 - 1.65)	6.45E-01	7.97E-01	1.48	(0.98- 2.24)	6.18E-02	1.57E-01	1.36	(0.89- 2.08)	1.57E-01	4.57E-01
PE(18:0_22:5) (n3)	1.60	(1.04 - 2.45)	<b>3.23E-02</b>	1.28E-01	1.71	(1.13- 2.58)	<b>1.10E-02</b>	<b>4.78E-02</b>	1.81	(1.13- 2.88)	<b>1.31E-02</b>	1.71E-01
PE(18:0_22:5) (n6)	2.05	(1.27 - 3.30)	<b>3.32E-03</b>	<b>3.31E-02</b>	2.05	(1.30- 3.22)	<b>1.99E-03</b>	<b>1.62E-02</b>	2.23	(1.31- 3.80)	<b>3.30E-03</b>	1.03E-01
PE(18:0_22:6)	2.04	(1.27 - 3.27)	<b>3.10E-03</b>	<b>3.31E-02</b>	2.13	(1.37- 3.32)	<b>8.31E-04</b>	<b>1.27E-02</b>	2.15	(1.29- 3.61)	<b>3.54E-03</b>	1.03E-01
PE(40:7)	1.48	(0.98 - 2.23)	6.38E-02	1.98E-01	1.62	(1.07- 2.45)	<b>2.27E-02</b>	7.96E-02	1.73	(1.09- 2.73)	<b>1.99E-02</b>	1.94E-01
PE(O-34:1)	0.40	(0.24 - 0.65)	<b>2.66E-04</b>	<b>1.52E-02</b>	0.45	(0.28- 0.73)	<b>1.18E-03</b>	<b>1.31E-02</b>	0.61	(0.39- 0.93)	<b>2.36E-02</b>	1.94E-01
PE(O-16:0/18:2)	0.54	(0.34 - 0.84)	<b>6.21E-03</b>	<b>4.63E-02</b>	0.58	(0.37- 0.91)	<b>1.73E-02</b>	6.60E-02	0.67	(0.44- 1.02)	5.88E-02	2.91E-01
PE(O-18:1/18:2)	0.43	(0.27 - 0.70)	<b>5.58E-04</b>	<b>1.53E-02</b>	0.44	(0.27- 0.72)	<b>9.86E-04</b>	<b>1.30E-02</b>	0.68	(0.45- 1.03)	6.94E-02	3.15E-01
PE(O-16:0/20:3)	0.79	(0.53 - 1.19)	2.63E-01	4.69E-01	0.71	(0.47- 1.06)	9.49E-02	2.12E-01	0.93	(0.62- 1.38)	7.03E-01	8.48E-01
PE(O-16:0/20:4)	0.53	(0.33 - 0.83)	<b>5.87E-03</b>	<b>4.45E-02</b>	0.58	(0.37- 0.90)	<b>1.54E-02</b>	6.04E-02	0.76	(0.50- 1.15)	1.97E-01	4.96E-01
PE(O-36:5)	0.41	(0.25 - 0.69)	<b>7.00E-04</b>	<b>1.57E-02</b>	0.52	(0.32- 0.83)	<b>6.19E-03</b>	<b>3.45E-02</b>	0.63	(0.40- 0.97)	<b>3.54E-02</b>	2.44E-01
PE(O-16:0/22:4)	0.70	(0.47 - 1.03)	6.75E-02	2.03E-01	0.94	(0.64- 1.39)	7.57E-01	8.47E-01	1.06	(0.70- 1.59)	7.83E-01	8.79E-01
PE(O-18:0/20:4)	0.59	(0.38 - 0.93)	<b>2.41E-02</b>	1.18E-01	0.62	(0.39- 0.97)	<b>3.81E-02</b>	1.14E-01	0.77	(0.51- 1.17)	2.18E-01	5.05E-01
PE(O-38:5) (a)	0.59	(0.37 - 0.95)	<b>3.10E-02</b>	1.27E-01	0.54	(0.34- 0.84)	<b>6.57E-03</b>	<b>3.54E-02</b>	0.70	(0.46- 1.07)	1.03E-01	3.80E-01
PE(O-38:5) (b)	0.56	(0.35 - 0.88)	<b>1.27E-02</b>	7.53E-02	ND	ND	ND	ND	ND	ND	ND	ND
PE(O-16:0/22:6)	0.55	(0.35 - 0.87)	<b>1.02E-02</b>	6.47E-02	0.55	(0.35- 0.86)	<b>8.75E-03</b>	<b>4.12E-02</b>	0.75	(0.49- 1.15)	1.88E-01	4.91E-01
PE(O-18:0/22:5) (a)	0.67	(0.44 - 1.03)	6.49E-02	2.00E-01	0.64	(0.42- 0.97)	<b>3.59E-02</b>	1.11E-01	0.79	(0.52- 1.19)	2.59E-01	5.28E-01

PE(O-18:0/22:6)	0.54	(0.34 - 0.86)	<b>8.58E-03</b>	5.59E-02	0.53	(0.33-0.84)	<b>6.84E-03</b>	<b>3.54E-02</b>	0.72	(0.47-1.10)	1.30E-01	4.17E-01
PE(O-18:1/22:6)	0.47	(0.29 - 0.77)	<b>2.79E-03</b>	<b>3.26E-02</b>	0.56	(0.36-0.88)	<b>1.17E-02</b>	<b>4.96E-02</b>	0.72	(0.48-1.10)	1.30E-01	4.17E-01
PE(P-15:0/20:4) (a)	0.77	(0.52 - 1.14)	1.84E-01	3.87E-01	0.74	(0.50-1.09)	1.27E-01	2.66E-01	0.77	(0.51-1.14)	1.93E-01	4.92E-01
PE(P-15:0/20:4) (b)	0.66	(0.43 - 0.99)	<b>4.65E-02</b>	1.61E-01	0.66	(0.44-1.00)	<b>4.88E-02</b>	1.32E-01	0.75	(0.51-1.12)	1.65E-01	4.61E-01
PE(P-15:0/22:6) (a)	0.53	(0.34 - 0.81)	<b>3.98E-03</b>	<b>3.64E-02</b>	0.70	(0.47-1.03)	7.31E-02	1.73E-01	0.64	(0.42-0.97)	<b>3.67E-02</b>	2.47E-01
PE(P-15:0/22:6) (b)	0.62	(0.41 - 0.94)	<b>2.60E-02</b>	1.23E-01	0.78	(0.52-1.16)	2.19E-01	3.96E-01	0.79	(0.53-1.19)	2.64E-01	5.29E-01
PE(P-16:0/18:1)	0.49	(0.31 - 0.77)	<b>1.90E-03</b>	<b>2.64E-02</b>	0.52	(0.34-0.81)	<b>3.66E-03</b>	<b>2.53E-02</b>	0.79	(0.53-1.16)	2.27E-01	5.15E-01
PE(P-16:0/18:2)	0.45	(0.28 - 0.72)	<b>9.57E-04</b>	<b>1.92E-02</b>	0.48	(0.31-0.74)	<b>1.00E-03</b>	<b>1.30E-02</b>	0.65	(0.43-0.99)	<b>4.36E-02</b>	2.52E-01
PE(P-16:0/18:3)	0.71	(0.47 - 1.06)	9.42E-02	2.51E-01	0.49	(0.31-0.76)	<b>1.64E-03</b>	<b>1.48E-02</b>	0.77	(0.52-1.14)	1.95E-01	4.93E-01
PE(P-16:0/20:3) (a)	0.54	(0.35 - 0.85)	<b>7.50E-03</b>	5.15E-02	ND	ND	ND	ND	ND	ND	ND	ND
PE(P-16:0/20:3) (b)	0.69	(0.45 - 1.04)	7.76E-02	2.23E-01	ND	ND	ND	ND	ND	ND	ND	ND
PE(P-16:0/20:3)	ND	ND	ND	ND	0.56	(0.36-0.85)	<b>7.38E-03</b>	<b>3.65E-02</b>	0.76	(0.51-1.14)	1.89E-01	4.91E-01
PE(P-16:0/20:4)	0.63	(0.41 - 0.96)	<b>3.14E-02</b>	1.27E-01	0.56	(0.37-0.86)	<b>7.38E-03</b>	<b>3.65E-02</b>	0.86	(0.57-1.28)	4.46E-01	6.84E-01
PE(P-16:0/20:5)	0.42	(0.26 - 0.69)	<b>6.16E-04</b>	<b>1.53E-02</b>	0.48	(0.30-0.76)	<b>1.77E-03</b>	<b>1.51E-02</b>	0.61	(0.40-0.94)	<b>2.53E-02</b>	1.97E-01
PE(P-16:0/22:4)	0.95	(0.64 - 1.40)	7.80E-01	8.65E-01	0.89	(0.60-1.33)	5.75E-01	7.32E-01	1.24	(0.83-1.84)	2.91E-01	5.59E-01
PE(P-16:0/22:5) (n3)	0.77	(0.51 - 1.15)	2.02E-01	4.09E-01	0.79	(0.53-1.18)	2.48E-01	4.31E-01	1.06	(0.71-1.59)	7.64E-01	8.76E-01
PE(P-16:0/22:5) (n6)	0.91	(0.61 - 1.38)	6.66E-01	8.10E-01	1.04	(0.70-1.55)	8.42E-01	9.08E-01	1.37	(0.89-2.12)	1.53E-01	4.50E-01
PE(P-16:0/22:6)	0.75	(0.49 - 1.13)	1.72E-01	3.66E-01	0.85	(0.57-1.26)	4.13E-01	6.13E-01	1.08	(0.73-1.60)	7.09E-01	8.48E-01
PE(P-17:0/20:4) (a)	0.77	(0.51 - 1.17)	2.19E-01	4.29E-01	0.71	(0.47-1.08)	1.09E-01	2.33E-01	0.99	(0.66-1.48)	9.51E-01	9.67E-01

PE(P-17:0/20:4) (b)	0.63	(0.41 - 0.98)	<b>4.19E-02</b>	1.51E-01	0.66	(0.43-1.01)	5.58E-02	1.43E-01	0.96	(0.64-1.43)	8.32E-01	9.07E-01
PE(P-17:0/22:6) (a)	1.04	(0.68 - 1.61)	8.48E-01	9.12E-01	0.93	(0.62-1.40)	7.16E-01	8.20E-01	1.10	(0.74-1.64)	6.48E-01	8.33E-01
PE(P-17:0/22:6) (b)	0.61	(0.39 - 0.96)	<b>3.11E-02</b>	1.27E-01	0.66	(0.43-1.01)	5.56E-02	1.43E-01	0.92	(0.61-1.37)	6.73E-01	8.41E-01
PE(P-18:0/18:1)	0.42	(0.26 - 0.69)	<b>5.57E-04</b>	<b>1.53E-02</b>	0.52	(0.34-0.82)	<b>4.72E-03</b>	<b>2.87E-02</b>	0.67	(0.45-1.00)	<b>4.82E-02</b>	2.60E-01
PE(P-18:0/18:2)	0.47	(0.29 - 0.74)	<b>1.07E-03</b>	<b>1.92E-02</b>	0.50	(0.32-0.78)	<b>2.52E-03</b>	<b>1.89E-02</b>	0.71	(0.47-1.05)	8.81E-02	3.52E-01
PE(P-18:0/18:3)	0.65	(0.43 - 0.99)	<b>4.45E-02</b>	1.56E-01	0.47	(0.29-0.76)	<b>2.12E-03</b>	<b>1.69E-02</b>	0.79	(0.54-1.16)	2.35E-01	5.19E-01
PE(P-18:0/20:3) (a)	0.55	(0.35 - 0.86)	<b>8.35E-03</b>	5.52E-02	ND	ND	ND	ND	ND	ND	ND	ND
PE(P-18:0/20:3) (b)	0.65	(0.43 - 1.00)	<b>4.88E-02</b>	1.65E-01	ND	ND	ND	ND	ND	ND	ND	ND
PE(P-18:0/20:3)	ND	ND	ND	ND	0.56	(0.36-0.87)	<b>9.70E-03</b>	<b>4.31E-02</b>	0.72	(0.48-1.08)	1.13E-01	3.89E-01
PE(P-18:0/20:4)	0.65	(0.43 - 0.99)	<b>4.72E-02</b>	1.61E-01	0.59	(0.38-0.91)	<b>1.66E-02</b>	6.43E-02	0.85	(0.57-1.26)	4.10E-01	6.57E-01
PE(P-18:0/20:5)	0.47	(0.29 - 0.77)	<b>2.57E-03</b>	<b>3.20E-02</b>	0.52	(0.33-0.84)	<b>6.96E-03</b>	<b>3.55E-02</b>	0.64	(0.42-0.99)	<b>4.26E-02</b>	2.52E-01
PE(P-18:0/22:4)	0.93	(0.63 - 1.39)	7.35E-01	8.46E-01	0.73	(0.48-1.12)	1.48E-01	2.99E-01	1.16	(0.78-1.72)	4.59E-01	6.98E-01
PE(P-18:0/22:5) (n3)	0.73	(0.48 - 1.10)	1.31E-01	3.08E-01	0.65	(0.43-1.00)	<b>4.82E-02</b>	1.31E-01	1.01	(0.68-1.50)	9.59E-01	9.71E-01
PE(P-18:0/22:5) (n6)	0.79	(0.53 - 1.16)	2.26E-01	4.37E-01	0.92	(0.61-1.38)	6.80E-01	8.07E-01	1.15	(0.77-1.71)	5.07E-01	7.41E-01
PE(P-18:0/22:6)	0.65	(0.42 - 1.00)	<b>4.95E-02</b>	1.65E-01	0.67	(0.43-1.03)	6.81E-02	1.68E-01	0.89	(0.60-1.32)	5.67E-01	7.77E-01
PE(P-18:1/18:1) (a)	0.35	(0.21 - 0.59)	<b>7.20E-05</b>	<b>7.42E-03</b>	0.43	(0.27-0.70)	<b>5.75E-04</b>	<b>1.02E-02</b>	0.64	(0.42-0.97)	<b>3.57E-02</b>	2.44E-01
PE(P-18:1/18:1) (b)	0.73	(0.48 - 1.12)	1.46E-01	3.27E-01	0.69	(0.45-1.06)	9.06E-02	2.04E-01	1.03	(0.70-1.52)	8.82E-01	9.36E-01
PE(P-18:1/18:2) (a)	0.41	(0.25 - 0.67)	<b>3.69E-04</b>	<b>1.53E-02</b>	0.44	(0.28-0.70)	<b>5.07E-04</b>	<b>9.74E-03</b>	0.58	(0.38-0.89)	<b>1.27E-02</b>	1.71E-01
PE(P-18:1/18:2) (b)	0.72	(0.48 - 1.09)	1.18E-01	2.89E-01	0.76	(0.50-1.14)	1.86E-01	3.53E-01	0.98	(0.67-1.44)	9.20E-01	9.53E-01

PE(P-18:1/18:3)	0.62	(0.40 - 0.95)	<b>2.68E-02</b>	1.24E-01	ND	ND	ND	ND	ND	ND	ND	ND
PE(P-18:1/20:3) (a)	0.52	(0.33 - 0.82)	<b>4.39E-03</b>	<b>3.84E-02</b>	ND	ND	ND	ND	ND	ND	ND	ND
PE(P-18:1/20:4) (a)	0.52	(0.33 - 0.80)	<b>3.24E-03</b>	<b>3.31E-02</b>	ND	ND	ND	ND	ND	ND	ND	ND
PE(P-18:1/20:4) (b)	0.56	(0.36 - 0.88)	<b>1.18E-02</b>	7.17E-02	ND	ND	ND	ND	ND	ND	ND	ND
PE(P-18:1/20:4)	ND	ND	ND	ND	0.58	(0.38-0.89)	<b>1.29E-02</b>	5.26E-02	0.80	(0.54-1.20)	2.88E-01	5.57E-01
PE(P-18:1/20:5) (a)	0.45	(0.28 - 0.74)	<b>1.40E-03</b>	<b>2.12E-02</b>	ND	ND	ND	ND	ND	ND	ND	ND
PE(P-18:1/20:5)	ND	ND	ND	ND	0.48	(0.30-0.77)	<b>2.44E-03</b>	<b>1.87E-02</b>	0.59	(0.38-0.93)	<b>2.22E-02</b>	1.94E-01
PE(P-18:1/22:4)	0.94	(0.63 - 1.39)	7.55E-01	8.50E-01	ND	ND	ND	ND	ND	ND	ND	ND
PE(P-18:1/22:5) (a)	0.66	(0.43 - 1.03)	6.73E-02	2.03E-01	0.65	(0.42-1.00)	<b>4.80E-02</b>	1.31E-01	0.95	(0.64-1.41)	7.94E-01	8.85E-01
PE(P-18:1/22:5) (b)	0.79	(0.52 - 1.18)	2.46E-01	4.56E-01	0.96	(0.64-1.44)	8.41E-01	9.08E-01	1.04	(0.70-1.57)	8.34E-01	9.07E-01
PE(P-18:1/22:6) (a)	0.65	(0.42 - 1.01)	5.31E-02	1.73E-01	ND	ND	ND	ND	ND	ND	ND	ND
PE(P-18:1/22:6) (b)	0.59	(0.38 - 0.91)	<b>1.70E-02</b>	9.19E-02	ND	ND	ND	ND	ND	ND	ND	ND
PE(P-18:1/22:6)	ND	ND	ND	ND	0.63	(0.41-0.97)	<b>3.73E-02</b>	1.12E-01	0.86	(0.58-1.29)	4.74E-01	7.16E-01
PE(P-19:0/20:4) (a)	0.71	(0.48 - 1.05)	8.56E-02	2.35E-01	0.70	(0.46-1.07)	1.02E-01	2.23E-01	0.85	(0.57-1.26)	4.14E-01	6.60E-01
PE(P-19:0/20:4) (b)	0.63	(0.41 - 0.97)	<b>3.67E-02</b>	1.38E-01	0.57	(0.37-0.89)	<b>1.28E-02</b>	5.26E-02	0.81	(0.54-1.23)	3.23E-01	5.96E-01
PE(P-20:0/18:1)	0.44	(0.28 - 0.70)	<b>4.29E-04</b>	<b>1.53E-02</b>	0.51	(0.32-0.82)	<b>4.95E-03</b>	<b>2.97E-02</b>	0.64	(0.43-0.96)	<b>3.28E-02</b>	2.41E-01
PE(P-20:0/18:2)	0.43	(0.27 - 0.69)	<b>5.05E-04</b>	<b>1.53E-02</b>	0.50	(0.32-0.79)	<b>2.92E-03</b>	<b>2.11E-02</b>	0.71	(0.47-1.06)	9.17E-02	3.53E-01
PE(P-20:0/20:4)	0.64	(0.42 - 0.99)	<b>4.34E-02</b>	1.54E-01	0.52	(0.33-0.84)	<b>6.63E-03</b>	<b>3.54E-02</b>	0.85	(0.57-1.27)	4.24E-01	6.67E-01
PE(P-20:0/22:6)	0.63	(0.41 - 0.97)	<b>3.65E-02</b>	1.38E-01	0.62	(0.39-0.97)	<b>3.61E-02</b>	1.11E-01	0.78	(0.53-1.17)	2.32E-01	5.15E-01



PE(P-20:1/20:4)	0.63	(0.41 - 0.95)	<b>2.67E-02</b>	1.24E-01	0.66	(0.43-1.00)	<b>4.76E-02</b>	1.31E-01	0.84	(0.57-1.23)	3.68E-01	6.32E-01
PE(P-20:1/22:6)	0.76	(0.51 - 1.15)	1.96E-01	4.04E-01	0.79	(0.52-1.20)	2.64E-01	4.52E-01	0.91	(0.62-1.35)	6.43E-01	8.33E-01
LPE(16:0) [sn2]	0.82	(0.55 - 1.22)	3.21E-01	5.26E-01	0.77	(0.50-1.17)	2.15E-01	3.91E-01	0.99	(0.66-1.48)	9.58E-01	9.71E-01
LPE(16:0) [sn1]	0.83	(0.56 - 1.23)	3.56E-01	5.60E-01	0.77	(0.50-1.16)	2.10E-01	3.85E-01	1.10	(0.74-1.62)	6.49E-01	8.33E-01
LPE(17:0) [sn2]	0.81	(0.54 - 1.20)	2.93E-01	4.99E-01	0.69	(0.46-1.03)	7.19E-02	1.73E-01	0.81	(0.54-1.20)	2.90E-01	5.57E-01
LPE(17:0) [sn1]	0.94	(0.63 - 1.40)	7.54E-01	8.50E-01	0.78	(0.52-1.16)	2.22E-01	3.96E-01	0.91	(0.60-1.38)	6.69E-01	8.41E-01
LPE(18:0) [sn2]	0.67	(0.44 - 1.03)	6.55E-02	2.01E-01	0.58	(0.36-0.93)	<b>2.32E-02</b>	8.03E-02	0.97	(0.64-1.45)	8.65E-01	9.28E-01
LPE(18:0) [sn1]	0.77	(0.51 - 1.16)	2.04E-01	4.12E-01	0.65	(0.42-1.02)	6.40E-02	1.60E-01	0.99	(0.67-1.48)	9.73E-01	9.81E-01
LPE(18:1) [sn2]	0.45	(0.27 - 0.74)	<b>1.69E-03</b>	<b>2.42E-02</b>	0.40	(0.24-0.69)	<b>9.85E-04</b>	<b>1.30E-02</b>	0.84	(0.55-1.26)	3.93E-01	6.44E-01
LPE(18:1) [sn1]	0.46	(0.28 - 0.75)	<b>2.10E-03</b>	<b>2.85E-02</b>	0.41	(0.24-0.71)	<b>1.16E-03</b>	<b>1.31E-02</b>	0.75	(0.50-1.14)	1.77E-01	4.77E-01
LPE(18:2) [sn2]	0.62	(0.41 - 0.93)	<b>2.13E-02</b>	1.09E-01	0.57	(0.37-0.88)	<b>1.17E-02</b>	<b>4.96E-02</b>	1.08	(0.73-1.61)	7.04E-01	8.48E-01
LPE(18:2) [sn1]	0.61	(0.40 - 0.92)	<b>1.97E-02</b>	1.02E-01	0.58	(0.38-0.89)	<b>1.28E-02</b>	5.26E-02	0.91	(0.61-1.36)	6.50E-01	8.33E-01
LPE(20:4) [sn2]	0.80	(0.54 - 1.19)	2.80E-01	4.87E-01	0.87	(0.57-1.31)	5.06E-01	6.80E-01	1.35	(0.89-2.05)	1.62E-01	4.57E-01
LPE(20:4) [sn1]	0.83	(0.55 - 1.23)	3.48E-01	5.53E-01	0.88	(0.58-1.33)	5.47E-01	7.17E-01	1.28	(0.84-1.94)	2.52E-01	5.28E-01
LPE(22:6) [sn2]	1.03	(0.71 - 1.49)	8.93E-01	9.35E-01	1.07	(0.72-1.59)	7.37E-01	8.26E-01	1.52	(1.00-2.33)	5.26E-02	2.68E-01
LPE(22:6) [sn1]	1.02	(0.70 - 1.47)	9.36E-01	9.58E-01	1.09	(0.74-1.61)	6.69E-01	8.01E-01	1.43	(0.94-2.17)	9.67E-02	3.62E-01
LPE(P-16:0)	0.59	(0.37 - 0.95)	<b>3.05E-02</b>	1.27E-01	0.55	(0.35-0.86)	<b>9.49E-03</b>	<b>4.31E-02</b>	0.95	(0.64-1.41)	8.02E-01	8.92E-01
LPE(P-18:0)	0.51	(0.32 - 0.83)	<b>6.55E-03</b>	<b>4.82E-02</b>	0.46	(0.28-0.74)	<b>1.27E-03</b>	<b>1.36E-02</b>	0.90	(0.60-1.35)	5.95E-01	7.97E-01
LPE(P-18:1)	0.56	(0.36 - 0.88)	<b>1.25E-02</b>	7.50E-02	0.60	(0.39-0.93)	<b>2.08E-02</b>	7.58E-02	0.92	(0.62-1.38)	6.90E-01	8.47E-01

LPE(P-20:0)	0.59	(0.39 - 0.88)	<b>1.05E-02</b>	6.58E-02	0.52	(0.33-0.81)	<b>3.97E-03</b>	<b>2.65E-02</b>	0.80	(0.53-1.19)	2.66E-01	5.29E-01
PI(16:0/16:0)	1.19	(0.78 - 1.82)	4.14E-01	6.13E-01	1.06	(0.70-1.61)	7.67E-01	8.54E-01	1.24	(0.81-1.90)	3.15E-01	5.87E-01
PI(16:0_16:1)	1.28	(0.83 - 1.96)	2.66E-01	4.72E-01	1.35	(0.89-2.06)	1.61E-01	3.20E-01	1.51	(0.96-2.37)	7.29E-02	3.21E-01
PI(34:0)	0.78	(0.51 - 1.19)	2.50E-01	4.57E-01	0.86	(0.57-1.28)	4.51E-01	6.44E-01	0.93	(0.62-1.39)	7.19E-01	8.48E-01
PI(34:1)	0.98	(0.65 - 1.48)	9.27E-01	9.56E-01	0.99	(0.66-1.49)	9.74E-01	9.79E-01	1.25	(0.82-1.91)	3.09E-01	5.80E-01
PI(35:1)	0.90	(0.60 - 1.35)	6.10E-01	7.66E-01	1.11	(0.74-1.67)	6.09E-01	7.64E-01	1.20	(0.79-1.83)	3.91E-01	6.44E-01
PI(17:0_18:2) (a+b)	1.06	(0.72 - 1.56)	7.76E-01	8.64E-01	1.12	(0.75-1.67)	5.88E-01	7.45E-01	1.27	(0.84-1.93)	2.58E-01	5.28E-01
PI(18:0_18:1)	0.58	(0.37 - 0.89)	<b>1.35E-02</b>	7.70E-02	0.61	(0.39-0.94)	<b>2.46E-02</b>	8.33E-02	0.84	(0.55-1.27)	3.96E-01	6.44E-01
PI(36:2) (a+b)	0.90	(0.61 - 1.34)	6.12E-01	7.67E-01	0.86	(0.57-1.30)	4.78E-01	6.60E-01	1.11	(0.74-1.67)	6.11E-01	8.13E-01
PI(18:1/18:2)	0.61	(0.40 - 0.94)	<b>2.40E-02</b>	1.18E-01	0.45	(0.28-0.73)	<b>1.09E-03</b>	<b>1.31E-02</b>	0.61	(0.40-0.93)	<b>2.30E-02</b>	1.94E-01
PI(16:0/20:3) (a)	1.01	(0.67 - 1.50)	9.80E-01	9.82E-01	0.93	(0.62-1.39)	7.31E-01	8.26E-01	1.10	(0.74-1.65)	6.31E-01	8.29E-01
PI(16:0/20:3) (b)	0.61	(0.39 - 0.95)	<b>2.86E-02</b>	1.25E-01	0.69	(0.45-1.05)	8.60E-02	1.96E-01	0.84	(0.55-1.26)	3.97E-01	6.44E-01
PI(16:0_20:4)	0.84	(0.56 - 1.27)	4.17E-01	6.15E-01	0.92	(0.61-1.37)	6.81E-01	8.07E-01	1.10	(0.73-1.66)	6.52E-01	8.33E-01
PI(17:0_20:4) (a+b)	0.88	(0.58 - 1.34)	5.56E-01	7.34E-01	0.89	(0.59-1.34)	5.72E-01	7.31E-01	1.08	(0.71-1.64)	7.09E-01	8.48E-01
PI(37:6)	0.78	(0.52 - 1.17)	2.30E-01	4.39E-01	0.86	(0.58-1.30)	4.82E-01	6.63E-01	0.96	(0.64-1.44)	8.50E-01	9.16E-01
PI(18:0/20:2)	1.01	(0.68 - 1.49)	9.75E-01	9.81E-01	0.82	(0.55-1.22)	3.20E-01	5.20E-01	1.01	(0.67-1.51)	9.76E-01	9.81E-01
PI(18:0_20:3) (a)	1.13	(0.75 - 1.69)	5.69E-01	7.42E-01	0.87	(0.58-1.31)	5.05E-01	6.80E-01	1.03	(0.69-1.54)	8.84E-01	9.36E-01
PI(18:0_20:3) (b)	0.48	(0.30 - 0.77)	<b>2.37E-03</b>	<b>3.05E-02</b>	0.58	(0.36-0.91)	<b>1.84E-02</b>	6.85E-02	0.73	(0.48-1.11)	1.44E-01	4.33E-01
PI(18:0_20:4)	0.80	(0.53 - 1.20)	2.76E-01	4.84E-01	0.81	(0.54-1.21)	3.00E-01	5.00E-01	1.07	(0.71-1.61)	7.35E-01	8.59E-01



LPI(20:4) [sn1]	1.09	(0.73 - 1.61)	6.81E-01	8.19E-01	ND	ND	ND	ND	ND	ND	ND	ND
LPI(20:4)	ND	ND	ND	ND	1.14	(0.77- 1.69)	5.24E-01	6.99E-01	1.21	(0.81- 1.81)	3.59E-01	6.32E-01
PS(36:1)	1.11	(0.76 - 1.63)	5.83E-01	7.49E-01	0.99	(0.68- 1.46)	9.69E-01	9.79E-01	1.24	(0.84- 1.84)	2.73E-01	5.38E-01
PS(36:2)	1.23	(0.84 - 1.82)	2.86E-01	4.96E-01	1.15	(0.77- 1.73)	4.83E-01	6.63E-01	1.30	(0.88- 1.93)	1.89E-01	4.91E-01
PS(38:3)	1.00	(0.68 - 1.48)	9.81E-01	9.82E-01	1.12	(0.76- 1.65)	5.61E-01	7.25E-01	1.18	(0.80- 1.75)	3.95E-01	6.44E-01
PS(38:4)	1.13	(0.77 - 1.66)	5.37E-01	7.22E-01	1.65	(1.09- 2.50)	<b>1.75E-02</b>	6.62E-02	1.26	(0.85- 1.87)	2.51E-01	5.28E-01
PS(38:5)	1.05	(0.71 - 1.55)	8.06E-01	8.87E-01	ND	ND	ND	ND	ND	ND	ND	ND
PS(40:5)	1.11	(0.75 - 1.63)	6.04E-01	7.62E-01	1.21	(0.82- 1.79)	3.35E-01	5.35E-01	1.19	(0.80- 1.75)	3.90E-01	6.44E-01
PS(40:6)	1.13	(0.77 - 1.66)	5.39E-01	7.23E-01	1.53	(1.02- 2.30)	<b>3.88E-02</b>	1.14E-01	1.21	(0.82- 1.79)	3.25E-01	5.98E-01
PG(34:1)	0.87	(0.59 - 1.29)	4.82E-01	6.71E-01	1.08	(0.73- 1.60)	7.07E-01	8.18E-01	1.41	(0.95- 2.09)	8.86E-02	3.52E-01
PG(36:1)	1.18	(0.77 - 1.82)	4.52E-01	6.42E-01	1.32	(0.88- 1.98)	1.83E-01	3.51E-01	1.24	(0.79- 1.95)	3.40E-01	6.12E-01
PG(36:2)	1.39	(0.90 - 2.16)	1.40E-01	3.18E-01	1.29	(0.85- 1.96)	2.30E-01	4.06E-01	1.13	(0.73- 1.74)	5.80E-01	7.82E-01
CE(14:0)	0.61	(0.40 - 0.94)	<b>2.42E-02</b>	1.18E-01	0.57	(0.38- 0.88)	<b>1.10E-02</b>	<b>4.78E-02</b>	0.71	(0.47- 1.08)	1.13E-01	3.89E-01
CE(15:0)	1.15	(0.77 - 1.73)	4.99E-01	6.81E-01	1.17	(0.77- 1.78)	4.70E-01	6.58E-01	1.25	(0.84- 1.87)	2.67E-01	5.29E-01
CE(16:0)	1.08	(0.73 - 1.59)	6.95E-01	8.27E-01	1.13	(0.75- 1.72)	5.55E-01	7.22E-01	1.23	(0.83- 1.82)	2.93E-01	5.60E-01
CE(16:1)	0.75	(0.49 - 1.16)	1.97E-01	4.04E-01	0.89	(0.59- 1.33)	5.67E-01	7.28E-01	0.86	(0.57- 1.31)	4.86E-01	7.28E-01
CE(16:2)	0.65	(0.40 - 1.05)	8.00E-02	2.28E-01	0.60	(0.38- 0.92)	<b>2.08E-02</b>	7.58E-02	0.73	(0.48- 1.11)	1.45E-01	4.33E-01
CE(17:0)	1.17	(0.78 - 1.76)	4.42E-01	6.33E-01	1.09	(0.72- 1.63)	6.90E-01	8.10E-01	1.26	(0.84- 1.90)	2.63E-01	5.29E-01
CE(17:1)	1.11	(0.73 - 1.67)	6.31E-01	7.81E-01	1.06	(0.71- 1.57)	7.84E-01	8.67E-01	1.22	(0.81- 1.82)	3.38E-01	6.11E-01

CE(18:0)	0.99	(0.66 - 1.49)	9.68E-01	9.75E-01	0.96	(0.63-1.45)	8.36E-01	9.07E-01	1.14	(0.76-1.70)	5.41E-01	7.61E-01
CE(18:1)	1.08	(0.72 - 1.61)	7.18E-01	8.38E-01	1.01	(0.67-1.52)	9.55E-01	9.70E-01	1.20	(0.81-1.77)	3.57E-01	6.32E-01
CE(18:2)	0.97	(0.64 - 1.46)	8.79E-01	9.28E-01	0.91	(0.60-1.38)	6.73E-01	8.03E-01	1.10	(0.75-1.61)	6.40E-01	8.33E-01
CE(18:3)	0.63	(0.40 - 0.99)	<b>4.33E-02</b>	1.54E-01	0.61	(0.39-0.94)	<b>2.66E-02</b>	8.87E-02	0.78	(0.51-1.19)	2.55E-01	5.28E-01
CE(20:1)	1.08	(0.73 - 1.60)	7.16E-01	8.38E-01	1.08	(0.71-1.66)	7.11E-01	8.18E-01	1.20	(0.80-1.80)	3.74E-01	6.32E-01
CE(20:3)	1.02	(0.68 - 1.52)	9.40E-01	9.59E-01	0.99	(0.67-1.47)	9.53E-01	9.70E-01	1.14	(0.77-1.69)	5.00E-01	7.35E-01
CE(20:4)	0.76	(0.50 - 1.15)	1.93E-01	4.02E-01	0.75	(0.50-1.14)	1.84E-01	3.51E-01	0.91	(0.61-1.36)	6.51E-01	8.33E-01
CE(20:5)	0.64	(0.41 - 1.01)	5.48E-02	1.75E-01	0.63	(0.40-0.97)	<b>3.68E-02</b>	1.12E-01	0.82	(0.54-1.26)	3.71E-01	6.32E-01
CE(22:0)	0.81	(0.54 - 1.22)	3.10E-01	5.16E-01	1.25	(0.82-1.91)	3.02E-01	5.00E-01	1.23	(0.79-1.92)	3.62E-01	6.32E-01
CE(22:1)	1.06	(0.72 - 1.58)	7.58E-01	8.50E-01	1.19	(0.78-1.82)	4.16E-01	6.15E-01	1.21	(0.81-1.82)	3.53E-01	6.31E-01
CE(22:4)	1.23	(0.81 - 1.88)	3.30E-01	5.30E-01	1.09	(0.73-1.64)	6.60E-01	7.95E-01	1.28	(0.86-1.92)	2.29E-01	5.15E-01
CE(22:5) (n3)	0.81	(0.52 - 1.25)	3.32E-01	5.33E-01	ND	ND	ND	ND	ND	ND	ND	ND
CE(22:5) (n6)	0.71	(0.46 - 1.11)	1.36E-01	3.12E-01	ND	ND	ND	ND	ND	ND	ND	ND
CE(22:5)	ND	ND	ND	ND	0.96	(0.64-1.43)	8.27E-01	9.02E-01	1.05	(0.69-1.59)	8.29E-01	9.07E-01
CE(22:6)	0.78	(0.52 - 1.19)	2.50E-01	4.57E-01	0.84	(0.55-1.26)	3.91E-01	5.93E-01	0.91	(0.61-1.38)	6.70E-01	8.41E-01
CE(24:0)	0.74	(0.50 - 1.10)	1.39E-01	3.17E-01	1.36	(0.88-2.10)	1.72E-01	3.38E-01	1.27	(0.82-1.97)	2.83E-01	5.54E-01
CE(24:1)	0.91	(0.61 - 1.34)	6.24E-01	7.78E-01	1.38	(0.89-2.12)	1.48E-01	2.99E-01	1.42	(0.90-2.24)	1.33E-01	4.21E-01
CE(24:4)	1.48	(0.97 - 2.25)	6.84E-02	2.05E-01	1.67	(1.05-2.64)	<b>2.87E-02</b>	9.32E-02	1.55	(1.02-2.37)	<b>4.16E-02</b>	2.52E-01
CE(24:5)	1.43	(0.93 - 2.19)	1.04E-01	2.66E-01	1.49	(0.97-2.31)	7.13E-02	1.73E-01	1.39	(0.91-2.13)	1.22E-01	4.00E-01

CE(24:6)	0.82	(0.55 - 1.22)	3.27E-01	5.27E-01	0.69	(0.46- 1.04)	7.38E-02	1.73E-01	0.90	(0.60- 1.36)	6.30E-01	8.29E-01
oxCE(18:2) [+2O]	1.67	(0.97 - 2.90)	6.65E-02	2.03E-01	1.17	(0.78- 1.76)	4.56E-01	6.46E-01	1.23	(0.82- 1.85)	3.23E-01	5.96E-01
oxCE(18:2) [+O]	0.70	(0.46 - 1.08)	1.12E-01	2.80E-01	0.67	(0.43- 1.04)	7.28E-02	1.73E-01	0.84	(0.56- 1.25)	3.93E-01	6.44E-01
COH	1.06	(0.71 - 1.58)	7.60E-01	8.50E-01	1.14	(0.75- 1.73)	5.28E-01	7.00E-01	1.38	(0.92- 2.07)	1.20E-01	4.00E-01
AcylCarnitine(12:0)	1.12	(0.73 - 1.72)	6.07E-01	7.64E-01	1.14	(0.74- 1.74)	5.52E-01	7.20E-01	1.34	(0.89- 2.01)	1.60E-01	4.57E-01
AcylCarnitine(13:0)	0.70	(0.45 - 1.08)	1.04E-01	2.66E-01	0.67	(0.44- 1.04)	7.70E-02	1.79E-01	0.85	(0.57- 1.26)	4.24E-01	6.67E-01
AcylCarnitine(14:0)	1.25	(0.81 - 1.91)	3.17E-01	5.26E-01	1.21	(0.78- 1.87)	3.87E-01	5.92E-01	1.55	(1.02- 2.34)	<b>4.06E-02</b>	2.52E-01
AcylCarnitine(14:1)	1.33	(0.85 - 2.07)	2.11E-01	4.21E-01	1.37	(0.89- 2.12)	1.55E-01	3.11E-01	1.48	(0.98- 2.24)	6.39E-02	3.04E-01
AcylCarnitine(14:2)	1.25	(0.82 - 1.90)	3.03E-01	5.08E-01	1.28	(0.84- 1.93)	2.47E-01	4.31E-01	1.35	(0.91- 2.02)	1.37E-01	4.23E-01
AcylCarnitine(15:0) (a)	0.68	(0.44 - 1.05)	8.17E-02	2.30E-01	0.51	(0.32- 0.82)	<b>5.12E-03</b>	<b>3.03E-02</b>	0.84	(0.57- 1.24)	3.71E-01	6.32E-01
AcylCarnitine(15:0) (b)	1.47	(0.94 - 2.30)	8.80E-02	2.39E-01	1.25	(0.80- 1.94)	3.30E-01	5.30E-01	1.70	(1.08- 2.66)	<b>2.18E-02</b>	1.94E-01
AcylCarnitine(16:0)	1.21	(0.80 - 1.84)	3.58E-01	5.61E-01	1.15	(0.76- 1.75)	5.05E-01	6.80E-01	1.61	(1.06- 2.43)	<b>2.55E-02</b>	1.97E-01
AcylCarnitine(16:1)	1.41	(0.91 - 2.20)	1.23E-01	2.96E-01	1.49	(0.96- 2.30)	7.34E-02	1.73E-01	1.69	(1.11- 2.56)	<b>1.37E-02</b>	1.73E-01
AcylCarnitine(17:0) (a)	1.29	(0.85 - 1.95)	2.40E-01	4.49E-01	0.93	(0.63- 1.38)	7.28E-01	8.26E-01	0.93	(0.62- 1.39)	7.17E-01	8.48E-01
AcylCarnitine(17:0) (b)	1.19	(0.78 - 1.81)	4.21E-01	6.17E-01	0.92	(0.60- 1.40)	6.99E-01	8.14E-01	1.29	(0.87- 1.93)	2.06E-01	5.00E-01
AcylCarnitine(18:0)	0.83	(0.55 - 1.25)	3.80E-01	5.80E-01	0.67	(0.43- 1.04)	7.40E-02	1.73E-01	1.03	(0.69- 1.52)	8.95E-01	9.41E-01
AcylCarnitine(18:1)	1.26	(0.82 - 1.92)	2.93E-01	4.99E-01	1.29	(0.84- 1.96)	2.46E-01	4.31E-01	1.50	(1.00- 2.25)	<b>4.74E-02</b>	2.60E-01
AcylCarnitine(18:2)	1.02	(0.69 - 1.50)	9.36E-01	9.58E-01	0.99	(0.67- 1.46)	9.54E-01	9.70E-01	1.16	(0.80- 1.70)	4.36E-01	6.75E-01
DG(16:0_16:0)	ND	ND	ND	ND	ND	ND	ND	ND	1.92	(1.16- 3.18)	<b>1.08E-02</b>	1.71E-01

DG(16:0_16:1)	1.96	(1.10 - 3.51)	<b>2.28E-02</b>	1.15E-01	ND	ND	ND	ND	2.03	(1.20-3.44)	<b>8.49E-03</b>	1.57E-01
DG(14:0_18:2)	1.05	(0.67 - 1.64)	8.33E-01	9.03E-01	1.48	(0.95-2.30)	8.22E-02	1.88E-01	1.11	(0.72-1.70)	6.44E-01	8.33E-01
DG(16:0_18:1)	2.05	(1.25 - 3.35)	<b>4.19E-03</b>	<b>3.72E-02</b>	2.04	(1.25-3.31)	<b>4.04E-03</b>	<b>2.65E-02</b>	2.13	(1.31-3.47)	<b>2.28E-03</b>	1.01E-01
DG(16:1_18:1)	1.70	(1.06 - 2.74)	<b>2.78E-02</b>	1.24E-01	1.92	(1.19-3.10)	<b>7.25E-03</b>	<b>3.65E-02</b>	1.70	(1.06-2.72)	<b>2.82E-02</b>	2.11E-01
DG(16:0_18:2)	1.99	(1.22 - 3.23)	<b>5.52E-03</b>	<b>4.43E-02</b>	2.12	(1.27-3.56)	<b>4.16E-03</b>	<b>2.66E-02</b>	2.23	(1.35-3.71)	<b>1.89E-03</b>	9.85E-02
DG(18:0_18:1)	2.13	(1.22 - 3.72)	<b>7.93E-03</b>	5.37E-02	ND	ND	ND	ND	1.81	(1.11-2.93)	<b>1.65E-02</b>	1.90E-01
DG(18:1_18:1)	2.09	(1.28 - 3.41)	<b>3.10E-03</b>	<b>3.31E-02</b>	2.30	(1.27-4.14)	<b>5.74E-03</b>	<b>3.28E-02</b>	1.88	(1.17-3.01)	<b>9.26E-03</b>	1.57E-01
DG(18:0_18:2)	1.64	(1.03 - 2.60)	<b>3.71E-02</b>	1.39E-01	ND	ND	ND	ND	1.74	(1.04-2.93)	<b>3.55E-02</b>	2.44E-01
DG(18:1_18:2)	1.82	(1.14 - 2.90)	<b>1.18E-02</b>	7.17E-02	2.23	(1.36-3.64)	<b>1.39E-03</b>	<b>1.37E-02</b>	1.87	(1.15-3.04)	<b>1.21E-02</b>	1.71E-01
DG(18:2_18:2)	1.46	(0.95 - 2.24)	8.39E-02	2.33E-01	1.63	(0.99-2.67)	5.38E-02	1.40E-01	1.55	(0.96-2.52)	7.60E-02	3.29E-01
DG(18:1_18:3)	1.30	(0.83 - 2.02)	2.52E-01	4.57E-01	1.27	(0.84-1.90)	2.55E-01	4.39E-01	1.29	(0.83-1.99)	2.53E-01	5.28E-01
DG(16:0_20:4)	1.61	(1.01 - 2.59)	<b>4.71E-02</b>	1.61E-01	1.22	(0.80-1.87)	3.62E-01	5.63E-01	1.61	(1.01-2.57)	<b>4.62E-02</b>	2.60E-01
DG(18:1_20:3)	1.12	(0.74 - 1.70)	5.94E-01	7.55E-01	0.93	(0.63-1.38)	7.35E-01	8.26E-01	1.14	(0.76-1.73)	5.26E-01	7.48E-01
DG(18:0_20:4)	1.25	(0.82 - 1.90)	3.00E-01	5.08E-01	1.29	(0.86-1.93)	2.14E-01	3.91E-01	1.40	(0.91-2.16)	1.21E-01	4.00E-01
DG(18:1_20:4)	1.28	(0.83 - 1.99)	2.62E-01	4.69E-01	1.14	(0.76-1.70)	5.31E-01	7.02E-01	1.37	(0.87-2.14)	1.73E-01	4.74E-01
DG(16:0_22:5)	2.31	(1.33 - 3.99)	<b>2.79E-03</b>	<b>3.26E-02</b>	1.92	(1.17-3.15)	<b>9.64E-03</b>	<b>4.31E-02</b>	2.57	(1.49-4.42)	<b>6.58E-04</b>	8.01E-02
DG(18:2_20:4)	1.31	(0.85 - 2.02)	2.24E-01	4.37E-01	1.18	(0.78-1.78)	4.27E-01	6.27E-01	1.41	(0.90-2.22)	1.36E-01	4.23E-01
DG(16:0_22:6)	1.39	(0.91 - 2.11)	1.26E-01	3.00E-01	1.19	(0.81-1.74)	3.75E-01	5.79E-01	1.53	(1.00-2.35)	<b>4.93E-02</b>	2.60E-01
TG(14:0_16:0_18:2)	0.97	(0.63 - 1.50)	9.07E-01	9.44E-01	1.10	(0.74-1.64)	6.42E-01	7.84E-01	1.05	(0.68-1.61)	8.40E-01	9.09E-01

TG(14:0_16:1_18:1)	0.79	(0.51 - 1.23)	3.02E-01	5.08E-01	0.93	(0.62- 1.39)	7.17E-01	8.20E-01	0.85	(0.56- 1.30)	4.59E-01	6.98E-01
TG(14:0_16:1_18:2)	0.78	(0.50 - 1.22)	2.70E-01	4.76E-01	0.92	(0.61- 1.38)	6.82E-01	8.07E-01	0.82	(0.53- 1.27)	3.75E-01	6.32E-01
TG(14:0_18:0_18:1)	0.72	(0.46 - 1.11)	1.34E-01	3.10E-01	1.03	(0.69- 1.52)	9.01E-01	9.42E-01	0.80	(0.53- 1.22)	2.95E-01	5.60E-01
TG(14:0_18:2_18:2)	0.87	(0.57 - 1.32)	5.01E-01	6.81E-01	0.94	(0.64- 1.39)	7.60E-01	8.48E-01	0.88	(0.59- 1.34)	5.61E-01	7.77E-01
TG(14:1_16:0_18:1)	0.93	(0.61 - 1.42)	7.46E-01	8.50E-01	0.99	(0.66- 1.47)	9.48E-01	9.70E-01	0.97	(0.64- 1.46)	8.69E-01	9.30E-01
TG(14:1_16:1_18:0)	1.05	(0.69 - 1.62)	8.11E-01	8.90E-01	1.17	(0.78- 1.77)	4.53E-01	6.45E-01	1.14	(0.74- 1.75)	5.64E-01	7.77E-01
TG(14:1_18:0_18:2)	0.99	(0.65 - 1.50)	9.62E-01	9.72E-01	1.19	(0.80- 1.76)	3.89E-01	5.93E-01	1.03	(0.69- 1.55)	8.79E-01	9.35E-01
TG(14:1_18:1_18:1)	0.96	(0.63 - 1.48)	8.65E-01	9.21E-01	1.23	(0.82- 1.83)	3.14E-01	5.12E-01	1.06	(0.69- 1.63)	7.84E-01	8.79E-01
TG(15:0_16:0_18:1)	1.32	(0.86 - 2.03)	1.97E-01	4.04E-01	1.59	(1.00- 2.53)	5.06E-02	1.35E-01	1.39	(0.90- 2.15)	1.37E-01	4.23E-01
TG(15:0_18:1_18:1)	1.55	(1.00 - 2.39)	<b>4.92E-02</b>	1.65E-01	2.33	(1.43- 3.81)	<b>7.25E-04</b>	<b>1.19E-02</b>	1.63	(1.03- 2.56)	<b>3.52E-02</b>	2.44E-01
TG(16:0_16:0_16:0)	1.07	(0.71 - 1.63)	7.35E-01	8.46E-01	1.43	(0.90- 2.27)	1.25E-01	2.64E-01	1.16	(0.76- 1.76)	4.89E-01	7.28E-01
TG(16:0_16:0_18:0)	0.97	(0.63 - 1.47)	8.76E-01	9.27E-01	1.20	(0.80- 1.79)	3.83E-01	5.88E-01	1.02	(0.67- 1.54)	9.31E-01	9.60E-01
TG(16:0_16:0_18:1)	1.42	(0.92 - 2.18)	1.15E-01	2.85E-01	1.85	(1.19- 2.90)	<b>6.71E-03</b>	<b>3.54E-02</b>	1.52	(0.97- 2.36)	6.63E-02	3.04E-01
TG(16:0_16:0_18:2)	1.39	(0.91 - 2.15)	1.31E-01	3.08E-01	1.97	(1.24- 3.12)	<b>4.09E-03</b>	<b>2.65E-02</b>	1.51	(0.97- 2.35)	6.48E-02	3.04E-01
TG(16:0_16:1_18:1)	1.11	(0.73 - 1.68)	6.30E-01	7.81E-01	1.45	(0.96- 2.20)	7.59E-02	1.77E-01	1.20	(0.78- 1.84)	4.16E-01	6.62E-01
TG(16:0_18:0_18:1)	1.16	(0.76 - 1.78)	4.82E-01	6.71E-01	1.31	(0.88- 1.97)	1.88E-01	3.53E-01	1.24	(0.80- 1.90)	3.35E-01	6.09E-01
TG(16:0_18:1_18:1)	1.39	(0.90 - 2.12)	1.35E-01	3.12E-01	2.47	(1.49- 4.09)	<b>4.41E-04</b>	<b>9.61E-03</b>	1.57	(1.00- 2.47)	5.25E-02	2.68E-01
TG(16:0_18:1_18:2)	1.42	(0.93 - 2.19)	1.07E-01	2.70E-01	2.18	(1.35- 3.54)	<b>1.55E-03</b>	<b>1.45E-02</b>	1.44	(0.92- 2.25)	1.08E-01	3.82E-01
TG(16:0_18:2_18:2)	1.30	(0.86 - 1.98)	2.15E-01	4.23E-01	1.58	(1.02- 2.43)	<b>3.87E-02</b>	1.14E-01	1.31	(0.86- 2.01)	2.14E-01	5.04E-01



TG(16:1_16:1_16:1)	0.96	(0.62 - 1.49)	8.63E-01	9.20E-01	1.16	(0.77- 1.76)	4.74E-01	6.58E-01	0.99	(0.64- 1.54)	9.77E-01	9.81E-01
TG(16:1_16:1_18:0)	0.75	(0.48 - 1.16)	1.95E-01	4.04E-01	1.03	(0.69- 1.54)	8.76E-01	9.27E-01	0.84	(0.55- 1.29)	4.29E-01	6.67E-01
TG(16:1_16:1_18:1)	1.30	(0.84 - 2.03)	2.40E-01	4.49E-01	1.62	(1.05- 2.49)	<b>2.87E-02</b>	9.32E-02	1.41	(0.89- 2.22)	1.39E-01	4.23E-01
TG(16:1_18:1_18:1)	1.19	(0.78 - 1.79)	4.21E-01	6.17E-01	1.70	(1.11- 2.60)	<b>1.57E-02</b>	6.11E-02	1.23	(0.81- 1.89)	3.32E-01	6.06E-01
TG(16:1_18:1_18:2)	1.21	(0.80 - 1.85)	3.67E-01	5.65E-01	1.64	(1.07- 2.51)	<b>2.29E-02</b>	7.96E-02	1.30	(0.84- 2.01)	2.36E-01	5.19E-01
TG(16:0_16:1_17:0)	1.26	(0.82 - 1.93)	2.98E-01	5.06E-01	1.60	(1.02- 2.51)	<b>4.03E-02</b>	1.17E-01	1.32	(0.86- 2.05)	2.08E-01	5.01E-01
TG(16:0_17:0_18:0)	1.12	(0.73 - 1.73)	5.97E-01	7.58E-01	1.15	(0.77- 1.71)	4.93E-01	6.74E-01	1.16	(0.76- 1.78)	4.88E-01	7.28E-01
TG(14:0_17:0_18:1)	1.24	(0.81 - 1.89)	3.22E-01	5.26E-01	1.49	(0.98- 2.27)	6.41E-02	1.60E-01	1.31	(0.85- 2.02)	2.18E-01	5.05E-01
TG(16:0_17:0_18:1)	1.46	(0.93 - 2.29)	9.85E-02	2.59E-01	1.94	(1.18- 3.17)	<b>8.43E-03</b>	<b>4.01E-02</b>	1.49	(0.94- 2.35)	8.65E-02	3.52E-01
TG(16:1_17:0_18:1)	1.49	(0.96 - 2.32)	7.80E-02	2.23E-01	2.10	(1.32- 3.34)	<b>1.77E-03</b>	<b>1.51E-02</b>	1.55	(0.98- 2.44)	5.86E-02	2.91E-01
TG(17:0_18:1_18:1)	1.49	(0.95 - 2.34)	8.06E-02	2.28E-01	2.06	(1.29- 3.29)	<b>2.46E-03</b>	<b>1.87E-02</b>	1.54	(0.97- 2.45)	6.58E-02	3.04E-01
TG(16:0_17:0_18:2)	1.46	(0.93 - 2.28)	1.01E-01	2.63E-01	1.96	(1.22- 3.15)	<b>5.25E-03</b>	<b>3.07E-02</b>	1.50	(0.95- 2.37)	7.89E-02	3.36E-01
TG(18:0_18:0_18:0)	0.79	(0.52 - 1.21)	2.79E-01	4.87E-01	1.12	(0.76- 1.66)	5.69E-01	7.29E-01	0.85	(0.57- 1.28)	4.45E-01	6.84E-01
TG(18:0_18:0_18:1)	1.11	(0.73 - 1.69)	6.23E-01	7.78E-01	1.37	(0.91- 2.07)	1.34E-01	2.78E-01	1.13	(0.74- 1.73)	5.67E-01	7.77E-01
TG(18:0_18:1_18:1)	1.42	(0.91 - 2.20)	1.22E-01	2.95E-01	1.65	(1.08- 2.52)	<b>2.11E-02</b>	7.62E-02	1.43	(0.91- 2.24)	1.20E-01	4.00E-01
TG(18:0_18:2_18:2)	1.08	(0.72 - 1.61)	7.03E-01	8.34E-01	1.48	(0.96- 2.29)	7.87E-02	1.82E-01	1.12	(0.75- 1.69)	5.75E-01	7.81E-01
TG(14:0_16:0_18:1)	0.84	(0.55 - 1.29)	4.32E-01	6.26E-01	1.03	(0.69- 1.53)	8.82E-01	9.27E-01	0.92	(0.61- 1.41)	7.13E-01	8.48E-01
TG(18:1_18:1_18:1)	1.41	(0.92 - 2.17)	1.16E-01	2.86E-01	2.08	(1.29- 3.36)	<b>2.58E-03</b>	<b>1.90E-02</b>	1.53	(0.98- 2.39)	6.40E-02	3.04E-01
TG(18:1_18:1_18:2)	1.47	(0.95 - 2.30)	8.59E-02	2.35E-01	1.77	(1.13- 2.79)	<b>1.28E-02</b>	5.26E-02	1.25	(0.82- 1.90)	2.99E-01	5.65E-01

TG(18:1_18:1_20:4)	0.93	(0.62 - 1.38)	7.11E-01	8.38E-01	1.32	(0.88- 1.98)	1.82E-01	3.51E-01	0.98	(0.66- 1.46)	9.31E-01	9.60E-01
TG(18:1_18:1_22:6)	1.10	(0.75 - 1.62)	6.29E-01	7.81E-01	1.35	(0.90- 2.01)	1.45E-01	2.94E-01	1.15	(0.78- 1.70)	4.76E-01	7.16E-01
TG(18:1_18:2_18:2)	1.13	(0.76 - 1.67)	5.57E-01	7.34E-01	1.40	(0.92- 2.11)	1.12E-01	2.39E-01	1.15	(0.77- 1.72)	4.87E-01	7.28E-01
TG(18:2_18:2_18:2)	1.15	(0.77 - 1.71)	4.94E-01	6.81E-01	1.30	(0.86- 1.96)	2.10E-01	3.85E-01	1.15	(0.76- 1.73)	4.99E-01	7.35E-01
TG(18:2_18:2_20:4)	0.76	(0.49 - 1.17)	2.06E-01	4.15E-01	1.04	(0.69- 1.55)	8.64E-01	9.23E-01	0.87	(0.58- 1.31)	5.14E-01	7.48E-01

<sup>1</sup> Fraction normalised to per ml of plasma

<sup>2</sup> abbreviations: (a) and (b) represent isoforms of a lipid that are separated chromatographically but have not been fully characterised; [sn-1] and [sn-2] represent the position of the acyl chain on the glycerol backbone; where two lipid species are mentioned, those peaks aren't fully resolved; (n3) and (n6) represent omega3 or omega6 fatty acyl chains; ND: not detected

<sup>3</sup> p-values corrected for multiple comparisons by the method of Benjamini-Hochberg. Significant p-values (<0.05) shown in bold



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**Author/s:**

Meikle, PJ; Formosa, MF; Mellett, NA; Jayawardana, KS; Giles, C; Bertovic, DA; Jennings, GL; Childs, W; Reddy, M; Carey, AL; Baradi, A; Nanayakkara, S; Wilson, AM; Duffy, SJ; Kingwell, BA

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