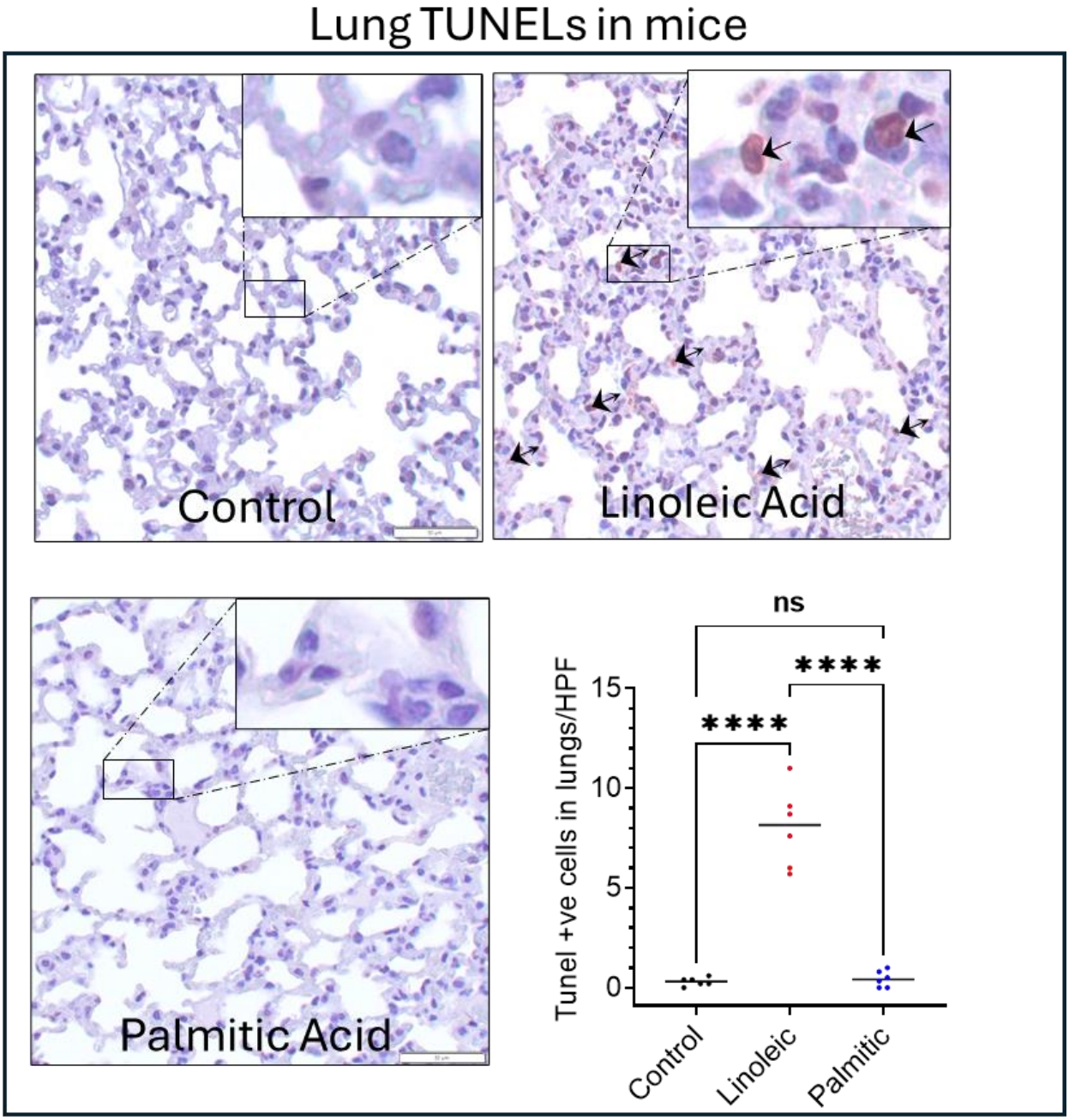
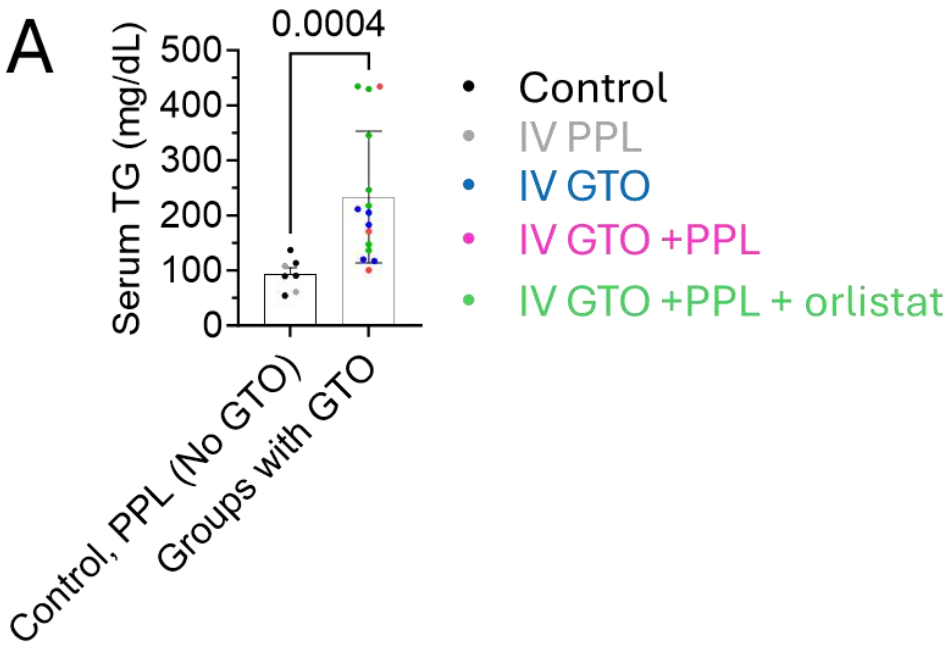
Supplementary Data:

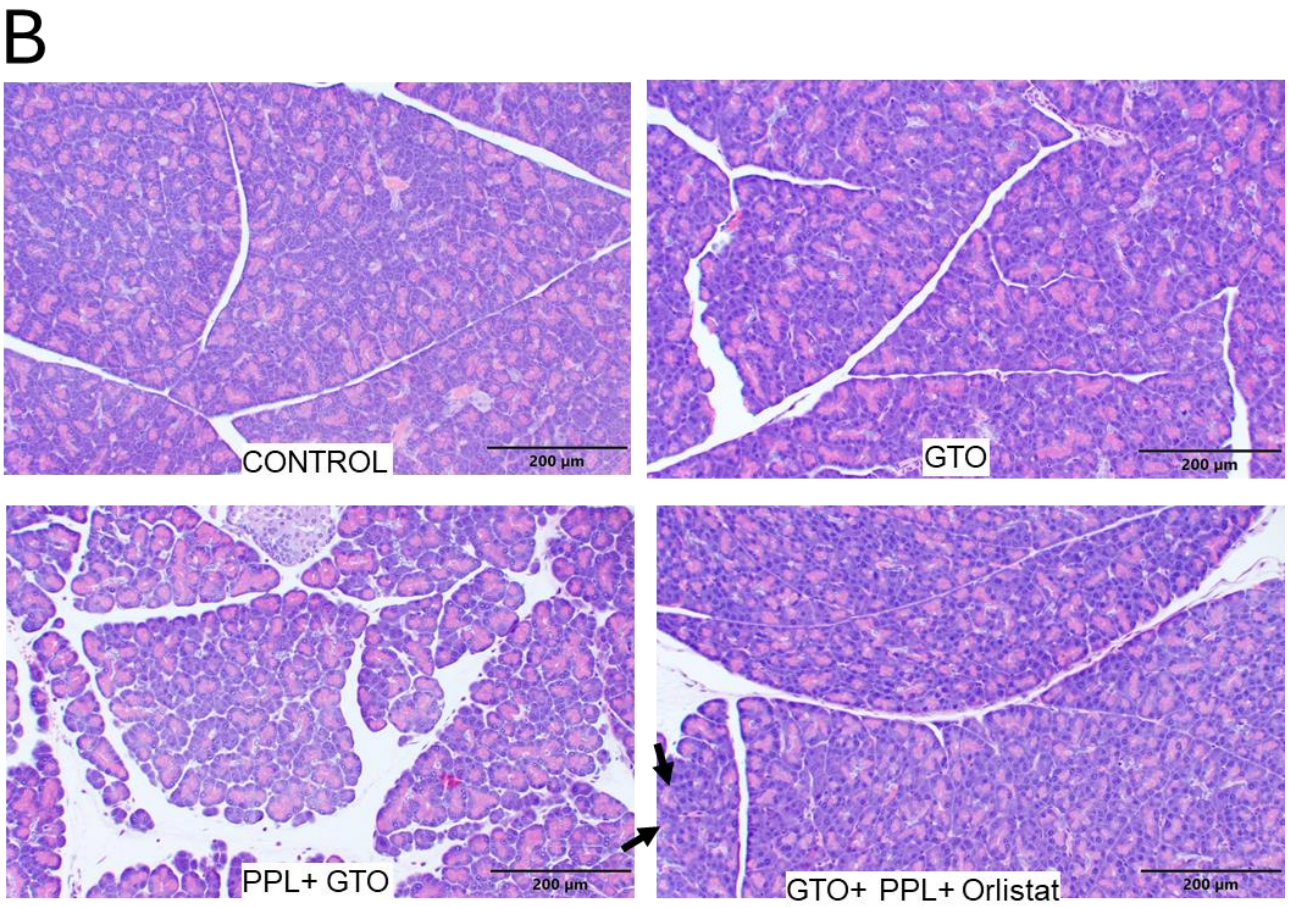
Supplementary Figure -1



Supplementary figure 1: TUNEL staining of lungs of mice given Linoleic acid, palmitic acid vs. controls. The representative images for each treatment are shown above their respective labels and the graph shows mean with a dot representing each mouse. Asterisks show significance by an ordinary one-way ANOVA.

Supplementary figure -2





Supplementary figure 2: **A:** Bar graphs with color coded individual values and standard deviation comparing the serum triglycerides in the corresponding groups. The p-value shown in by a Mann-Whitney test. **B:** Representative images of Hematoxylin and eosin-stained pancreatic sections from rats from each group mentioned below the image.

Supplementary figure -3

Normality of distribution

	Time	16:0	16:1	18:0	18:1w9	18:1w7	total C18:1	18:2	total NEFA
Test for normal distribution									
Anderson-Darling test									
A2*	14.78	6.178	15.19	11.43	6.815	12.37	7.052	6.834	6.547
P value	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Passed normality test (alpha=0.05)?	No	No	No	No	No	No	No	No	No
P value summary	****	****	****	****	****	****	****	****	****
D'Agostino & Pearson test									
K2	113.1	109.1	133.2	237.9	119	128.1	119	113.3	119.2
P value	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Passed normality test (alpha=0.05)?	No	No	No	No	No	No	No	No	No
P value summary	****	****	****	****	****	****	****	****	****
Shapiro-Wilk test									
W	0.8136	0.8714	0.782	0.7207	0.8648	0.8151	0.8618	0.8604	0.8657
P value	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Passed normality test (alpha=0.05)?	No	No	No	No	No	No	No	No	No
P value summary	****	****	****	****	****	****	****	****	****
Kolmogorov-Smirnov test									
KS distance	0.2166	0.09765	0.1604	0.1369	0.1144	0.1515	0.1167	0.1227	0.1069
P value	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Passed normality test (alpha=0.05)?	No	No	No	No	No	No	No	No	No
P value summary	****	****	****	****	****	****	****	****	****

Supplementary figure 3: Normality of distribution parameters for serum NEFA, and duration of sample storage duration before freezing comparing using 4 different tests. Each test is mentioned in bold in the first column. Each test showed an abnormal distribution

Supplementary figure -4

Normality of distribution

	Adm Lipase	TG 16:0	TG 16:1	TG 18:0	TG 18:1w9	TG 18:1w7	TG total C18:1	TG 18:2	total TG FA	total TG FA x Adm lipase
Compare normal and lognormal										
Probability normal (Gaussian)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Probability lognormal	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Likelihood ratio (LR)	2.355E-39	1.716E-252	2.663E-191	0	2.266E-245	1.745E-194	2.55E-243	3.662E-244	1.662E-249	4.104E-244
1/LR	4.246E+38	5.826E+251	3.756E+190	+infinity	4.413E+244	5.729E+193	3.922E+242	2.731E+243	6.017E+248	2.437E+243
Which distribution is more likely?	Lognormal	Lognormal	Lognormal	Lognormal	Lognormal	Lognormal	Lognormal	Lognormal	Lognormal	Lognormal
Test for normal distribution										
D'Agostino & Pearson test										
K2	69.71	561.1	413	583.2	567.9	536	567.2	570.5	566.1	531.4
P value	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Passed normality test (alpha=0.05)?	No	No	No	No	No	No	No	No	No	No
P value summary	****	****	****	****	****	****	****	****	****	****
Shapiro-Wilk test										
W	0.8276	0.1251	0.2843	0.07581	0.1208	0.1889	0.1226	0.1154	0.1203	0.1286
P value	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Passed normality test (alpha=0.05)?	No	No	No	No	No	No	No	No	No	No
P value summary	****	****	****	****	****	****	****	****	****	****
Kolmogorov-Smirnov test										
KS distance	0.1625	0.4108	0.3573	0.4412	0.408	0.3671	0.4066	0.4063	0.4099	0.4146
P value	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Passed normality test (alpha=0.05)?	No	No	No	No	No	No	No	No	No	No
P value summary	****	****	****	****	****	****	****	****	****	****

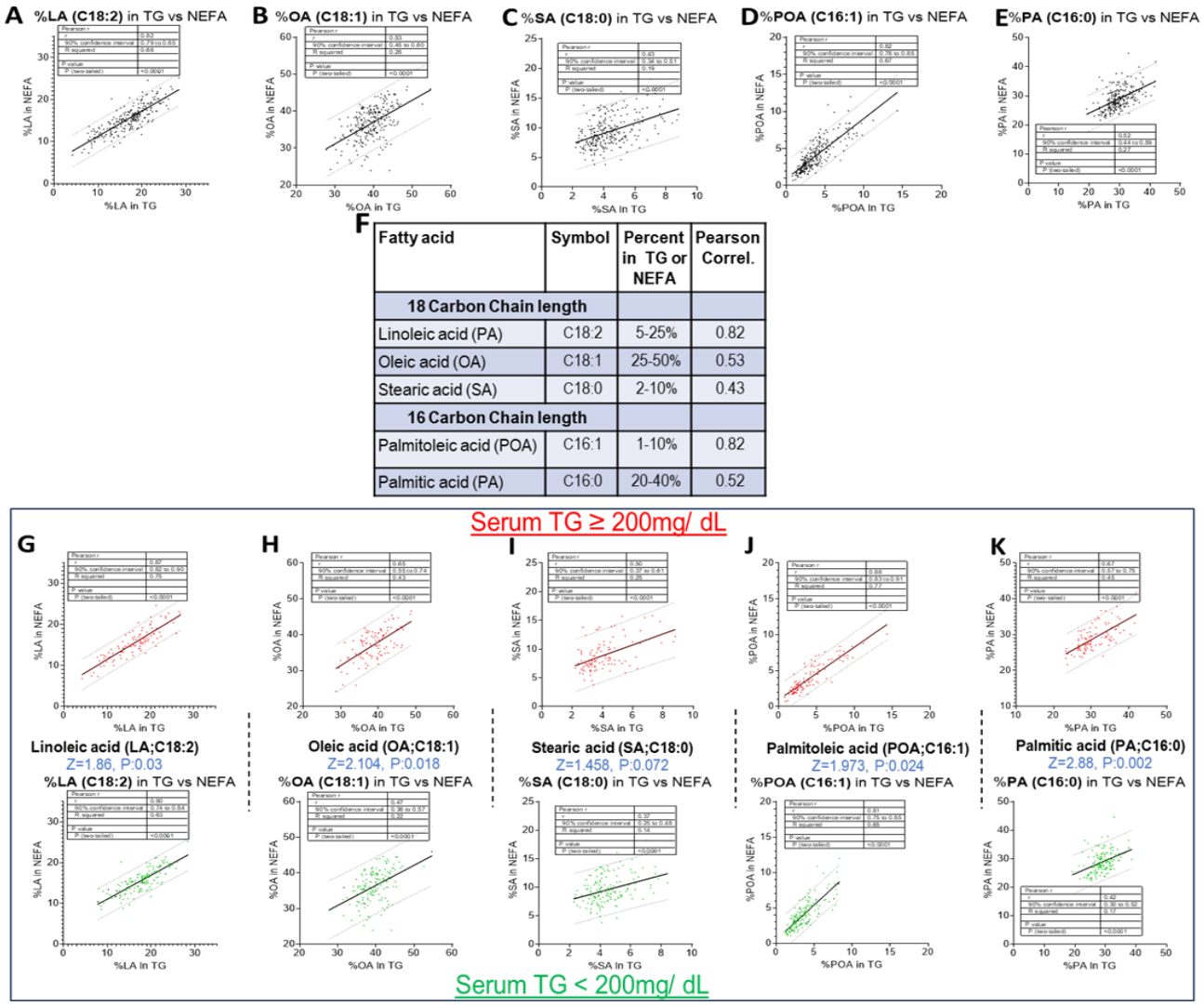
Supplementary figure 4: Normality of distribution for serum lipase, and each fatty acid concentration studied in serum triglycerides (TG), lipase product with TGFAs using 4 different tests. Each test is mentioned in bold in the first column. All tests showed an abnormal distribution.

Supplementary figure -5

	TG>500	TG 301-500	TG 150-300	TG< 150
Number of values	27	35	100	107
Minimum	505.3	300.8	150	9.6
25% Percentile	561	324.6	171.7	71.6
Median	730.2	369.2	199.5	104.9
75% Percentile	1064	425	238.8	126.9
Maximum	22234	481.4	296.9	149
Range	21729	180.6	146.9	139.4
Mean	1633	373	206.7	97.65
Std. Deviation	4133	55.62	40.99	37.68
Std. Error of Mean	795.4	9.402	4.099	3.643

Supplementary figure 5: Table describing the characteristics of each AP patient group of serum triglycerides (mentioned at top of each column). The row with the “number of values” depicts the number of patients in each group.

Supplementary figure -6



F

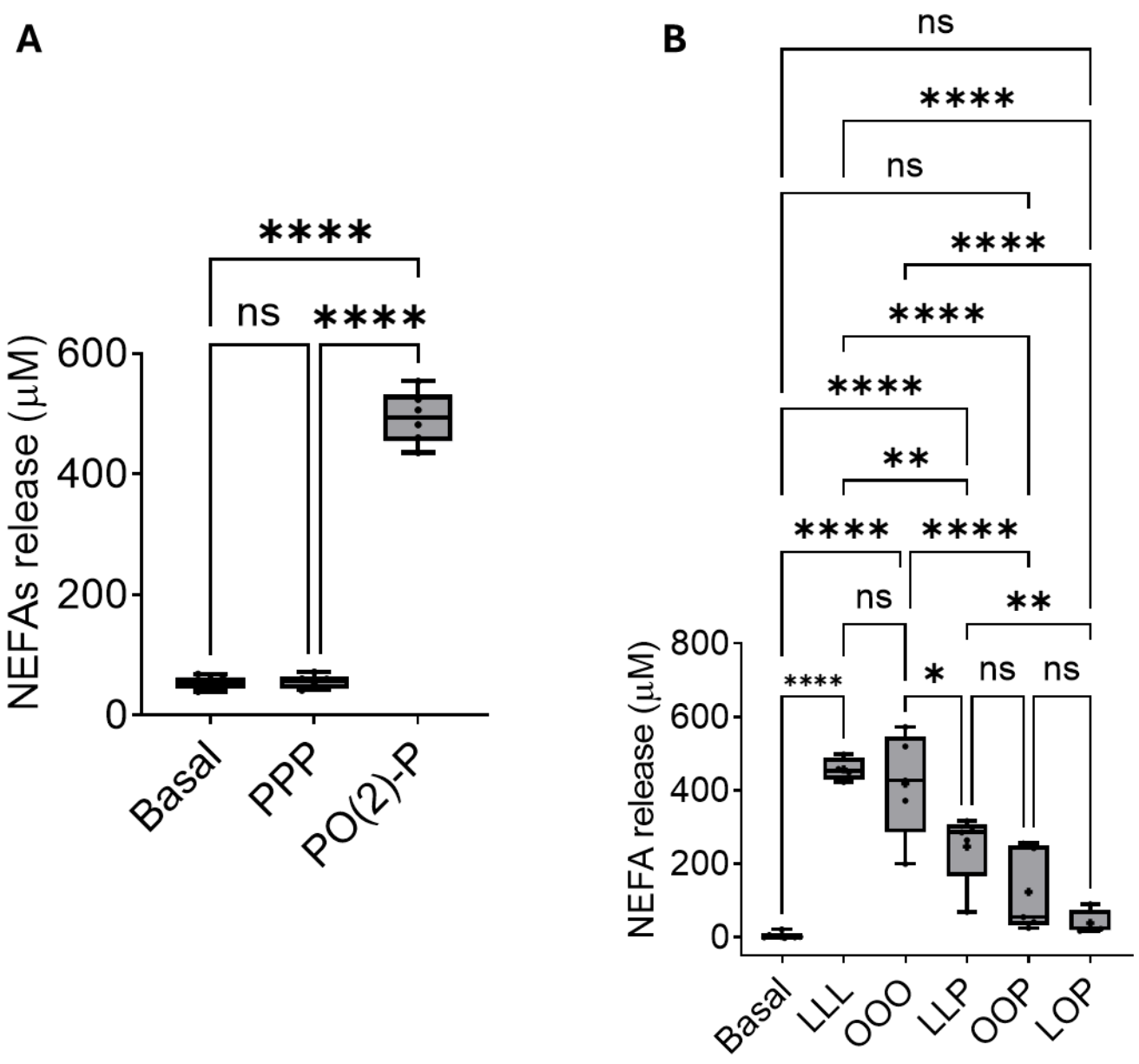
Fatty acid	Symbol	Percent in TG or NEFA	Pearson Correl.
18 Carbon Chain length			
Linoleic acid (PA)	C18:2	5-25%	0.82
Oleic acid (OA)	C18:1	25-50%	0.53
Stearic acid (SA)	C18:0	2-10%	0.43
16 Carbon Chain length			
Palmitoleic acid (POA)	C16:1	1-10%	0.82
Palmitic acid (PA)	C16:0	20-40%	0.52

L

Fatty acid	Correl. TG ≥200	Correl. TG <200	*P.* value
18 Carbon Chain length			
Linoleic acid (PA)	0.87	0.80	0.03
Oleic acid (OA)	0.65	0.47	0.018
Stearic acid (SA)	0.50	0.37	0.072
16 Carbon Chain length			
Palmitoleic acid (POA)	0.88	0.81	0.024
Palmitic acid (PA)	0.67	0.42	0.002

Supplementary figure 6: Correlation between % of NEFA in serum and corresponding % TGFAs. A-E: Graphs showing linear correlations between % of A) Linoleic Acid (LA), B) Oleic Acid (OA), C) Stearic Acid (SA), D) Palmitic Acid (PA) and E) palmitoleic acid (POA) present in serum in the TGFA form (x-axis) and NEFA form (y-axis). **F:** table showing range of proportions (percentage) for each fatty acid in serum and their Pearson correlations. **G-K** Graphs comparing the above linear correlations for each fatty acid at serum triglycerides ≥ 200mg/dL (upper panel) vs. < 200 mg/dL (lower panel). The text in blue between the panels compares the strength of correlations. **L:** table summarizing the Pearson correlations for each fatty acids at TGs ≥ 200 mg/dL vs. < 200mg/dL, with the last column showing the significance of differences as measured on the Online-Calculator for testing correlations: Psychometrica using the option for comparison of correlations from independent samples.

Supplementary figure -7



<u>Supplementary figure 7:</u> A, B: Box and whisker plots comparing NEFAs released in acinar medium from 300 micromolar triglycerides over 15 minutes. The triglycerides (e.g. LLL) are mentioned below the x-axis. asterisks denoted P values as: "**" for P<0.01, "***" for p< 0.001, "**** for P<0.0001 using an ordinary one-way ANOVA.

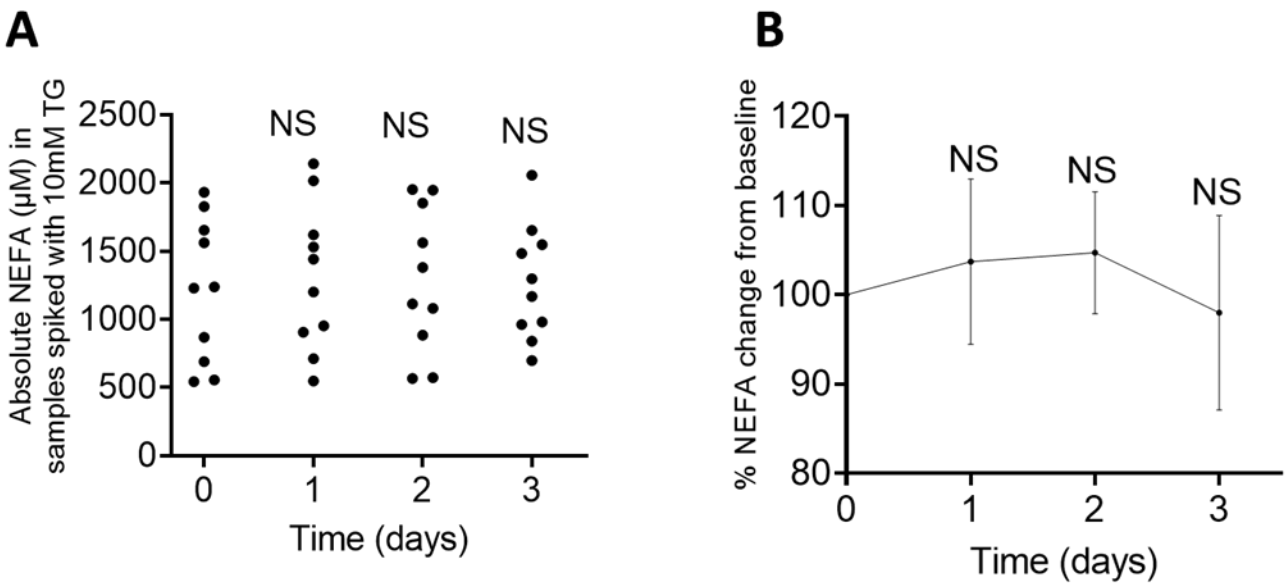
Supplementary figure -8

Correlation of storage time vs. NEFA concentration

	Time	Timevs.16:0	Timevs.16:1	Timevs.18:0	Timevs.18:1w9	Timevs.18:1w7	Timevs.total C18:1	Timevs.18:2	Timevs.total NEFA
Spearman r									
r		0.04931	0.05033	0.01289	0.07435	0.05233	0.07373	0.08866	0.07168
95% confidence interval		-0.07662 to 0.1737	-0.07561 to 0.1747	-0.1127 to 0.1381	-0.05159 to 0.1980	-0.07361 to 0.1766	-0.05221 to 0.1974	-0.03721 to 0.2118	-0.05426 to 0.1954
P value									
P (two-tailed)		0.4294	0.4199	0.8364	0.2331	0.4017	0.237	0.1548	0.2504
P value summary		ns	ns	ns	ns	ns	ns	ns	ns
Exact or approximate P value?		Approximate	Approximate	Approximate	Approximate	Approximate	Approximate	Approximate	Approximate
Significant? (alpha = 0.05)		No	No	No	No	No	No	No	No
Number of XY Pairs		259	259	259	259	259	259	259	259

Supplementary figure 8: Table showing the Spearman correlations (r) and their significance (p) between storage duration and each NEFA.

Supplementary figure -9



Supplementary figure 9: Change in serum NEFA concentrations over 3 days of storage at 4^0C after adding 10mM triglycerides simulating normal composition as described in methods. **A**: Absolute NEFA concentrations measured immediately after addition of TGs, and daily over the 3 days of storage. **B**: Data shown as % change from baseline. NS: not significant from baseline on an ordinary one-way ANOVA.