

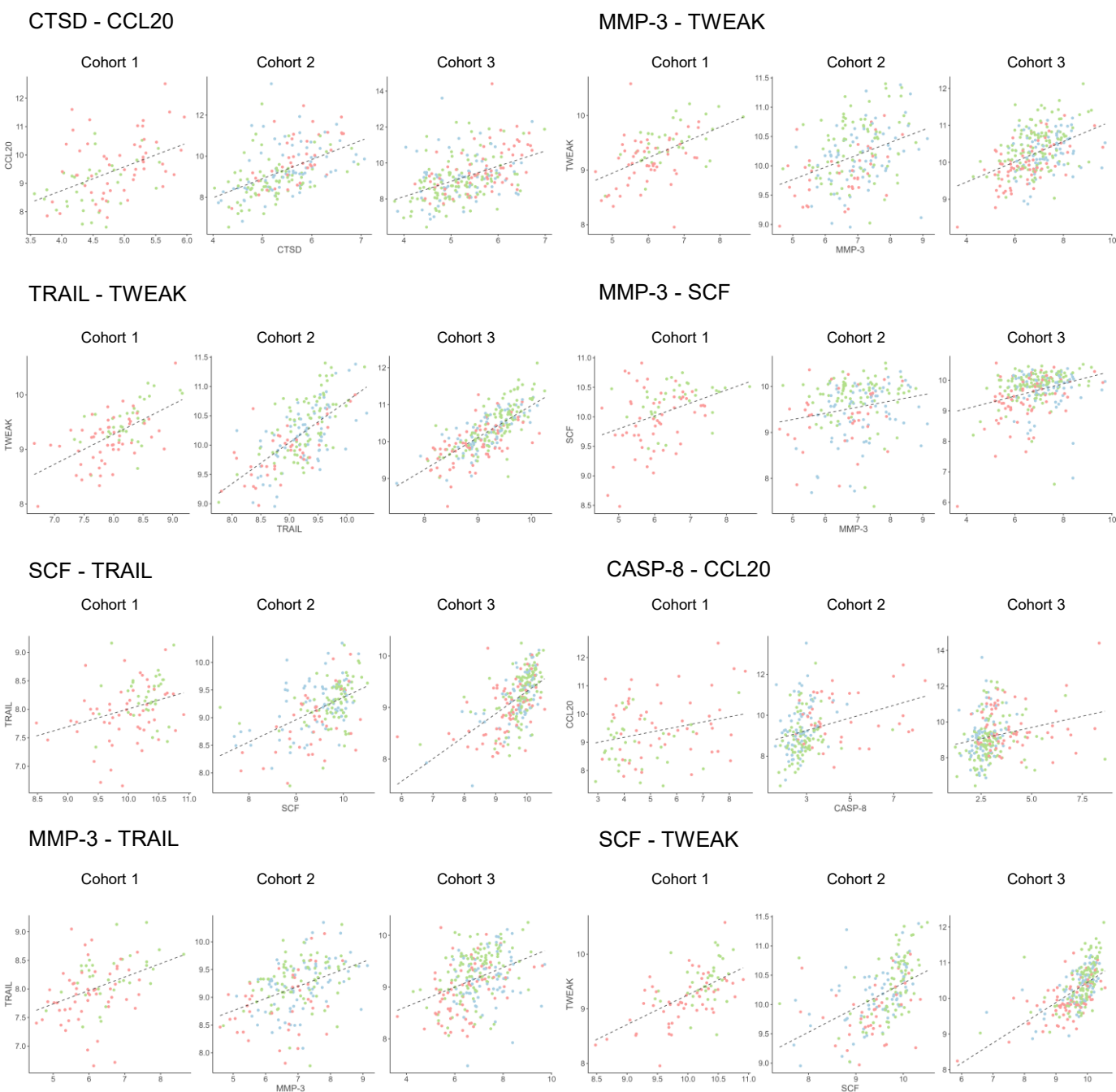


Figure S1. Protein-to-protein correlations. Among the seven proteins that showed changes between MASH and MASLD reproducibly in all three cohorts, those that were significantly correlated with each other with Pearson's correlation value R of more than 0.2 were plotted. Light blue dots indicate HCV, green MASLD and red MASH; X- and Y-axes indicate protein expression levels with NPX values. The dots represent each data point. The dot colors indicate clinical category of the samples. Blue dots represent HCV, green dots represent MASLD, and red dots indicate MASH.

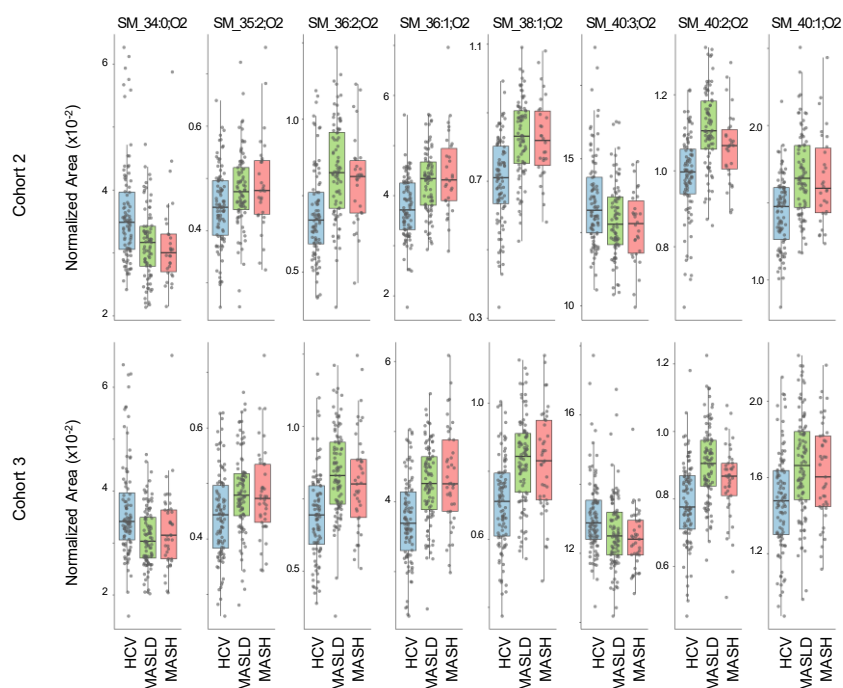
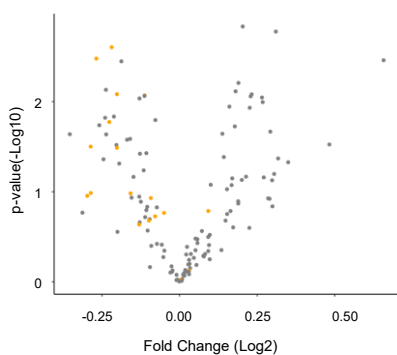


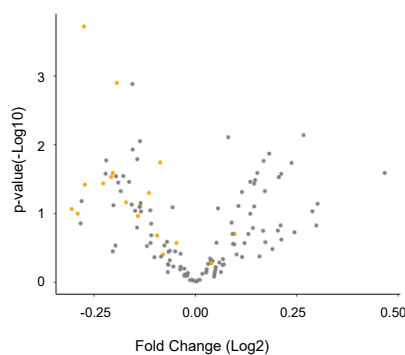
Figure S2. Sphingomyelins (SMs) with differential levels between HCV and MASH. Horizontal lines in the rectangle represent the median, boxes represent the interquartile range, and whiskers represent the 5th and 95th percentiles. The dots represent each data point.

Cohort 2

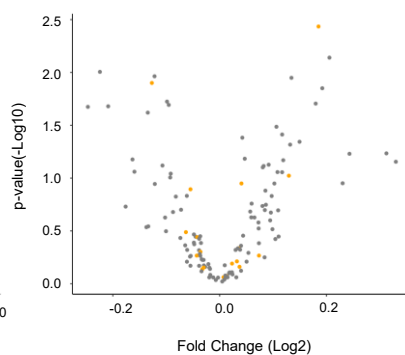
MASH vs MASLD



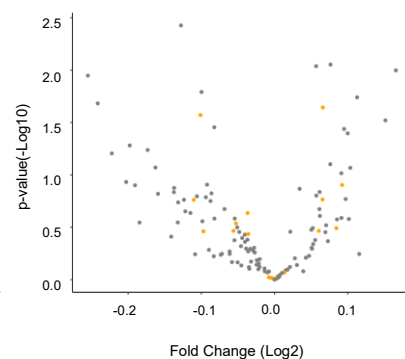
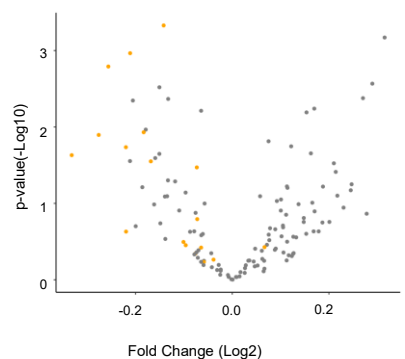
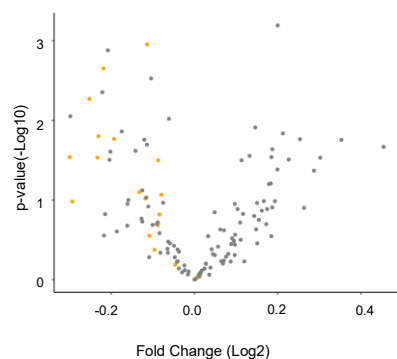
MASH vs HCV



MASLD vs HCV



Cohort 3



● TG containing FA 18:2
● Other TGs

Figure S3. Volcano plots showing differences in TG levels among clinical categories. Each dot represents 132 features for TG 18 of which TG features containing FA 18:2 are colored yellow. The X-axis represents the log2 fold change between clinical categories. The Y-axis represents the p-value by two-tailed Student's t-test (value of $-\log_{10}$).

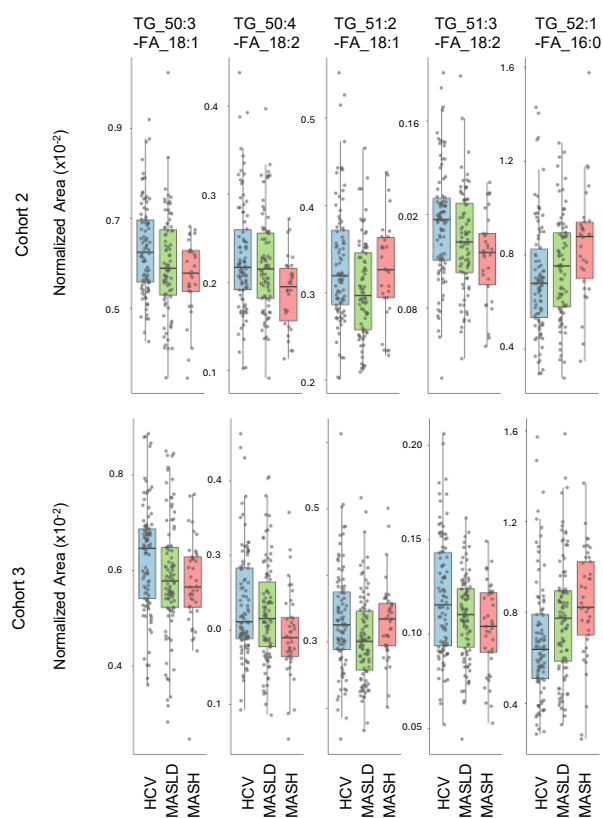


Figure S4. Triglycerides (TGs) with differential levels reproduced in Cohort 2 and Cohort 3 among HCV to MASH or MASLD. The lipids exhibited significant variances in one-way ANOVA test following FDR multiple testing correction and Tukey's HSD test between HCV and MASLD or MASH (see Table S7). Horizontal lines in the rectangles represent the median, boxes represent the interquartile range, and whiskers represent the 5th and 95th percentiles. The dots represent each data point.

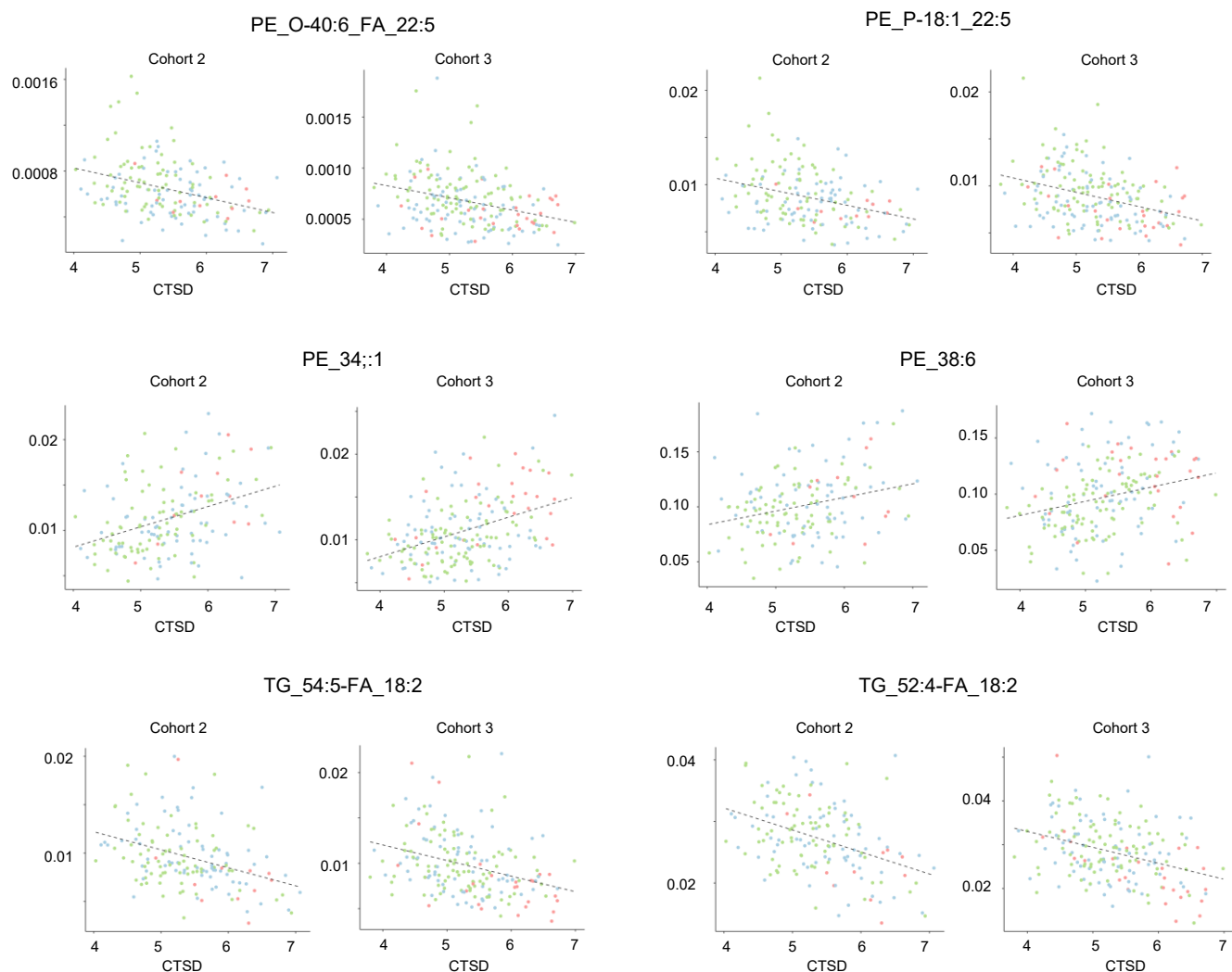


Figure S5. CTSD-to-Lipid correlations. Pearson's correlation analysis showed a significant correlation between CTSD to lipids reproducibly altered level in MASH as shown in Table S8. Among them, the correlations for PE and TG and CTSD, which are well characterized in MASH, are shown in the plots. The dots represent each data point. The dot colors indicate clinical category of the samples. Blue dots represent HCV, green dots represent MASLD and red dots indicate MASH.