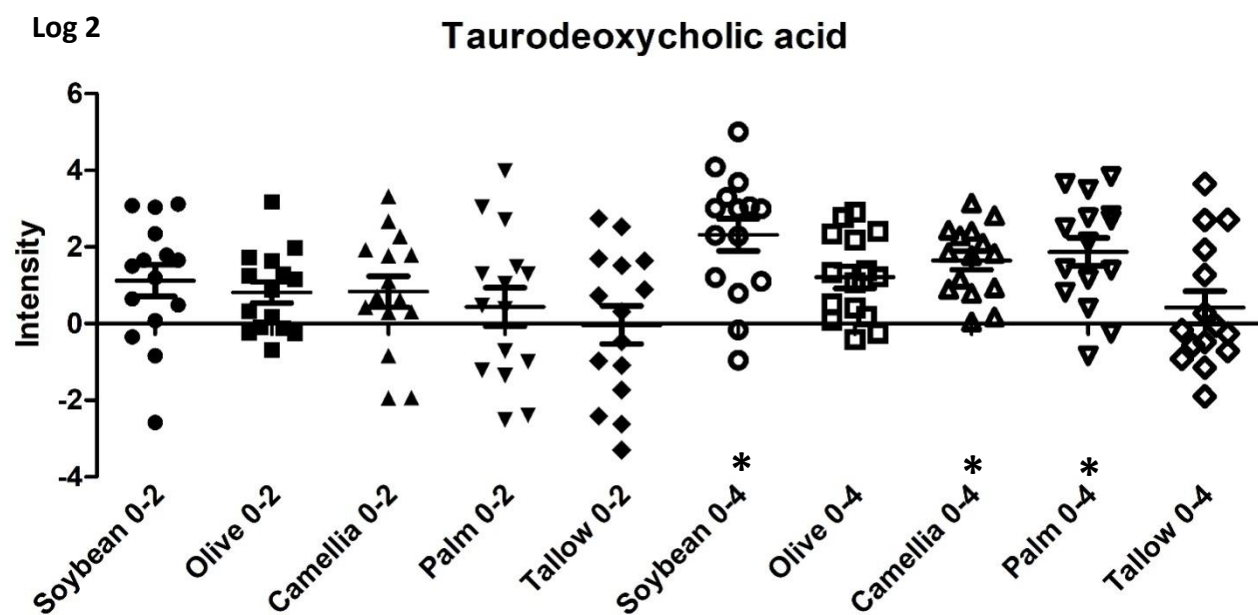
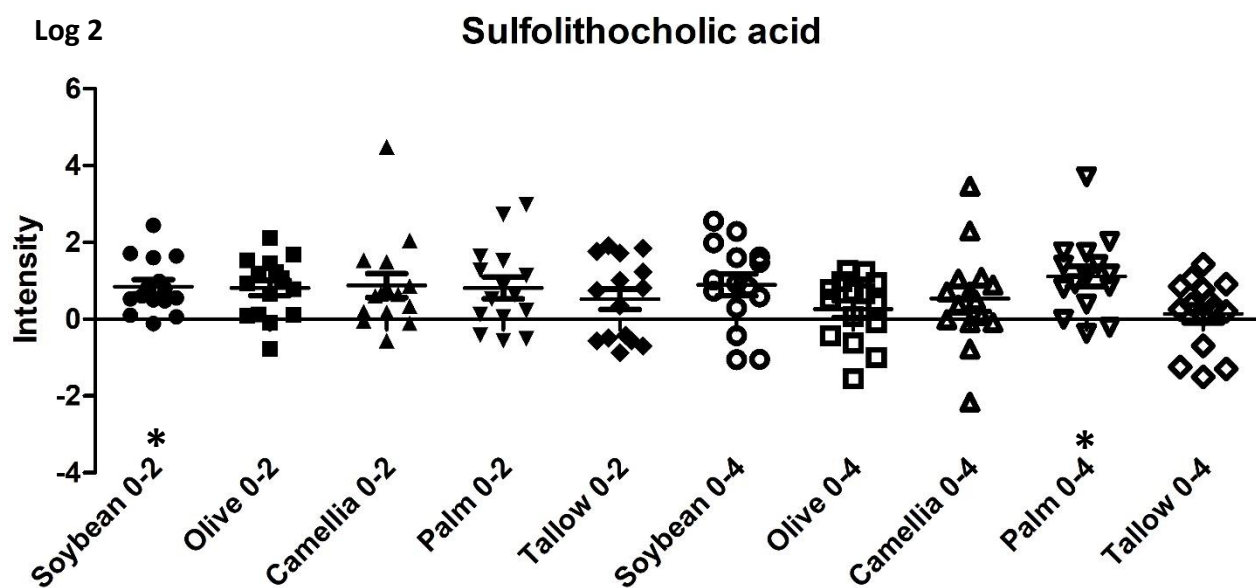


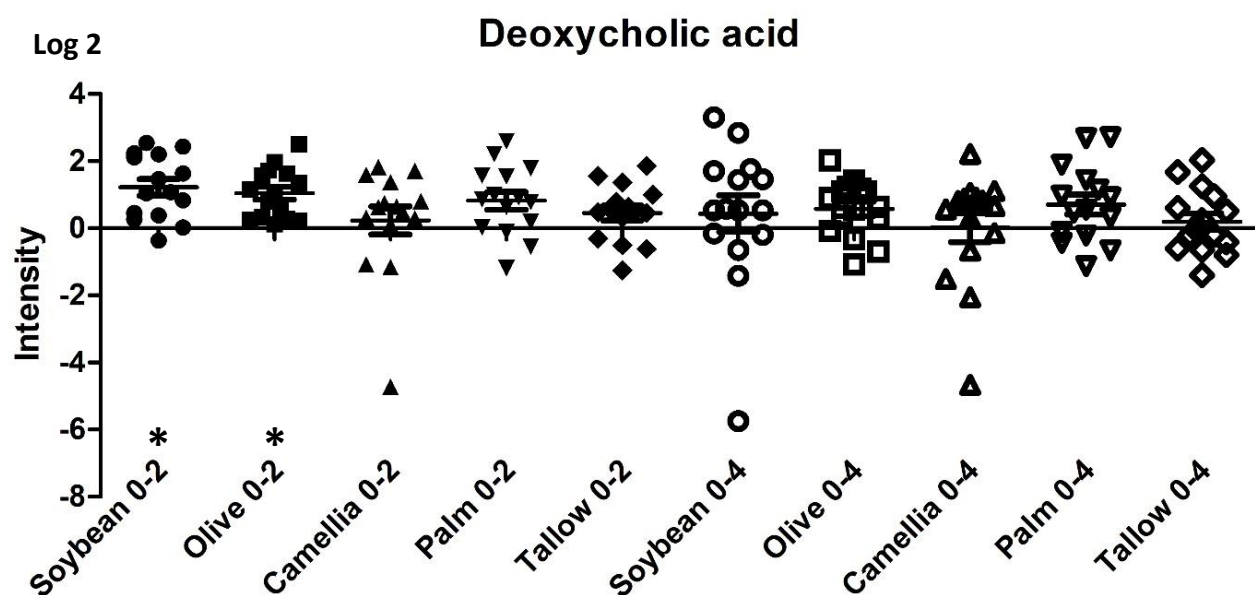
Supplemental Figure 1. Serum glycochenodeoxycholate differences between the control group (no oil added) and experimental groups (consuming various oils) after the test milkshake intake. *P < 0.05; Wilcoxon sign- rank test.



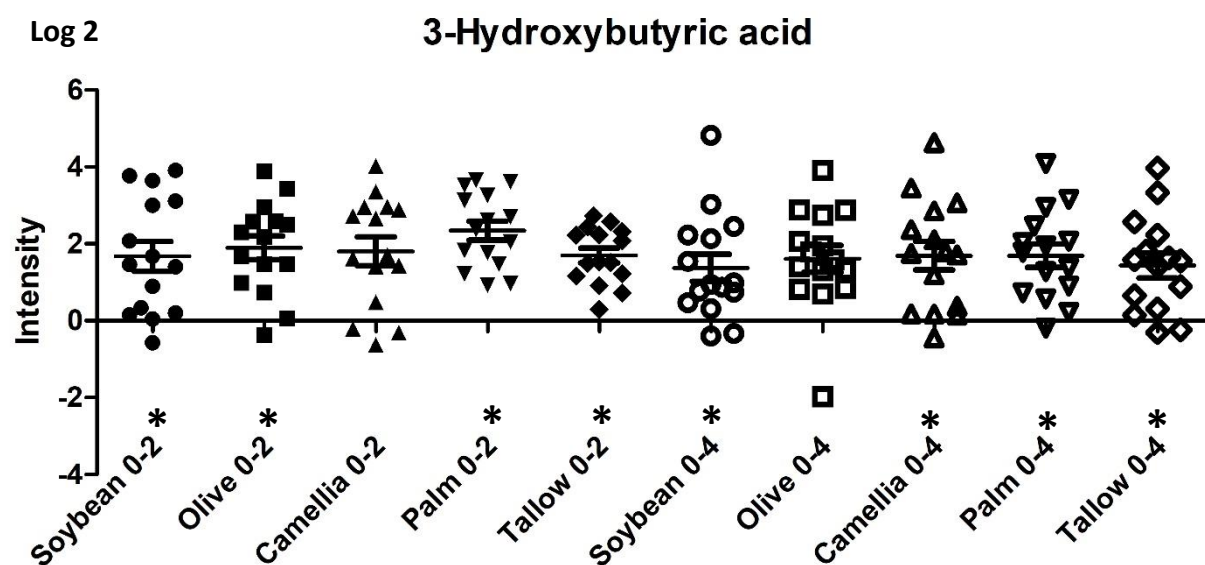
Supplemental Figure 2. Serum taurodeoxycholic acid differences between the control group (no oil added) and experimental groups (consuming various oils) after the test milkshake intake. * $P < 0.05$; Wilcoxon sign- rank test.



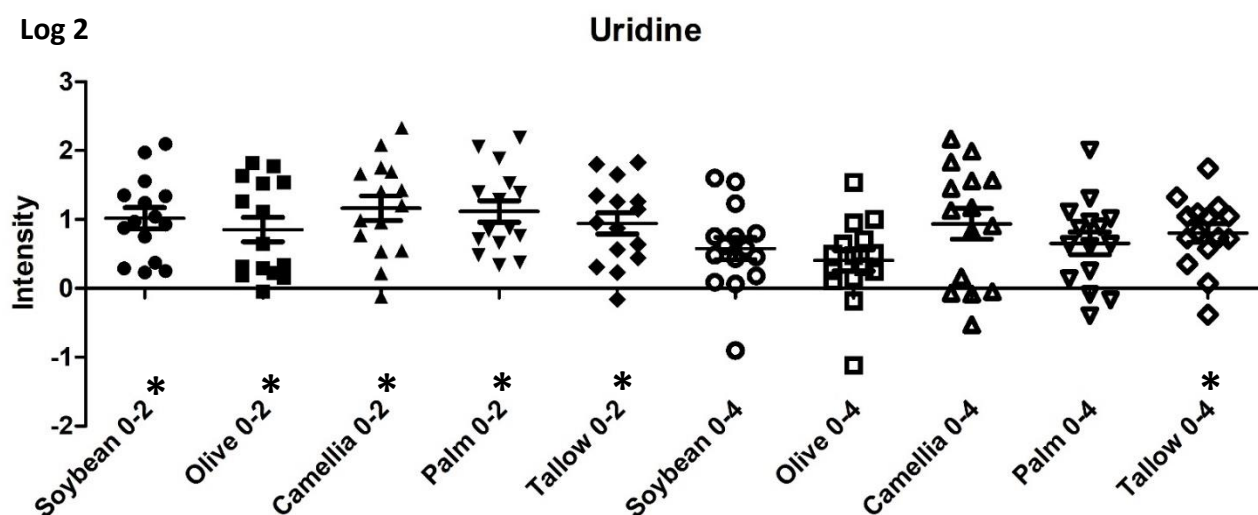
Supplemental Figure 3. Serum sulfolithocholic acid differences between the control group (no oil added) and experimental groups (consuming various oils) after the test milkshake intake. * $P < 0.05$; Wilcoxon sign- rank test.



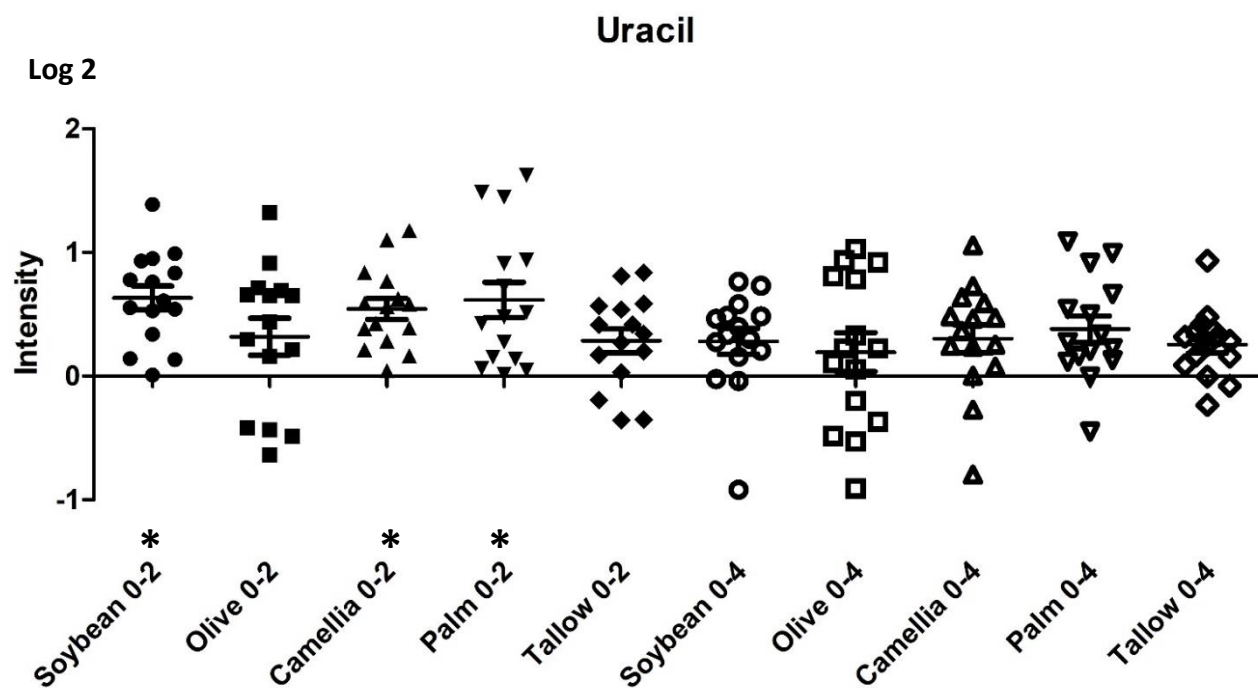
Supplemental Figure 4. Serum deoxycholic acid differences between the control group (no oil added) and experimental groups (consuming various oils) after the test milkshake intake (conc). *P < 0.05; Wilcoxon sign- rank test.



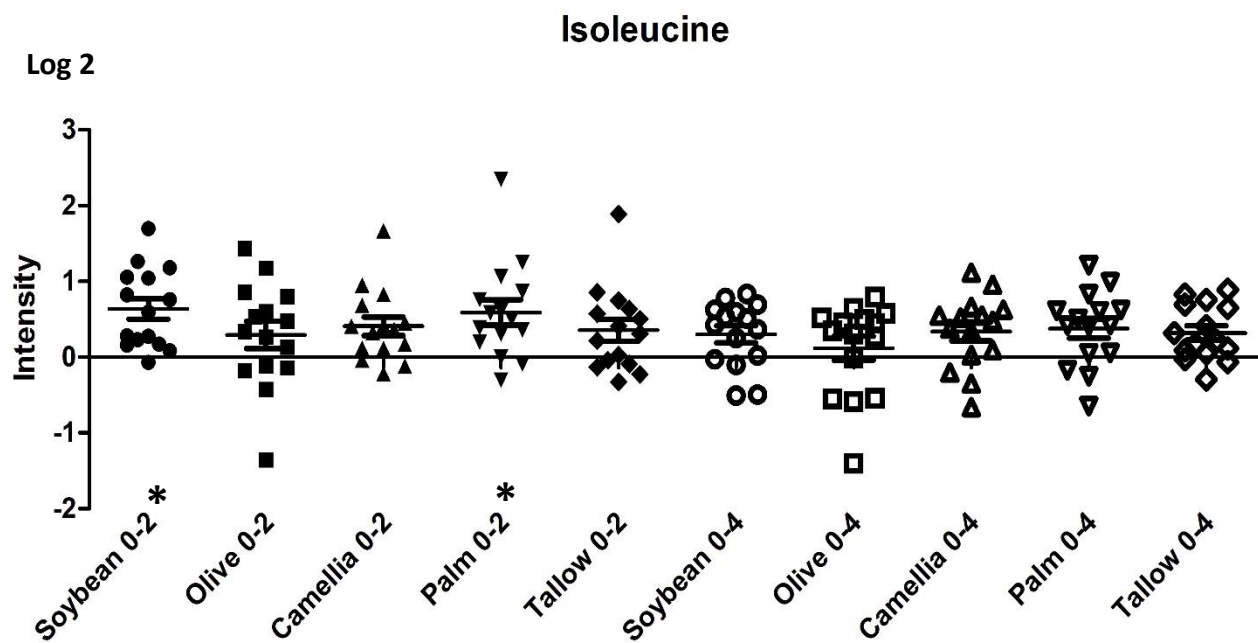
Supplemental Figure 5. Serum 3-hydroxybutyrate differences between the control group (no oil added) and experimental groups (consuming various oils) after the test milkshake intake (conc). *P < 0.05; Wilcoxon sign- rank test.



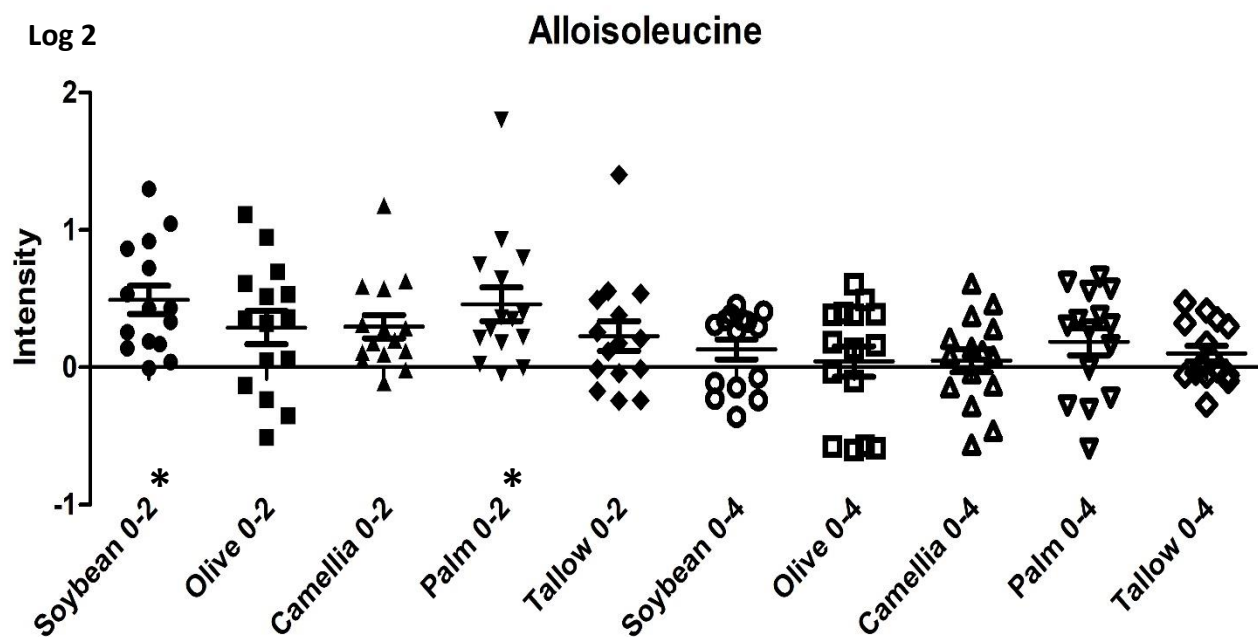
Supplemental Figure 6. Serum uridine differences between the control group (no oil added) and experimental groups (consuming various oils) after the test milkshake intake (conc). *P < 0.05; Wilcoxon sign- rank test.



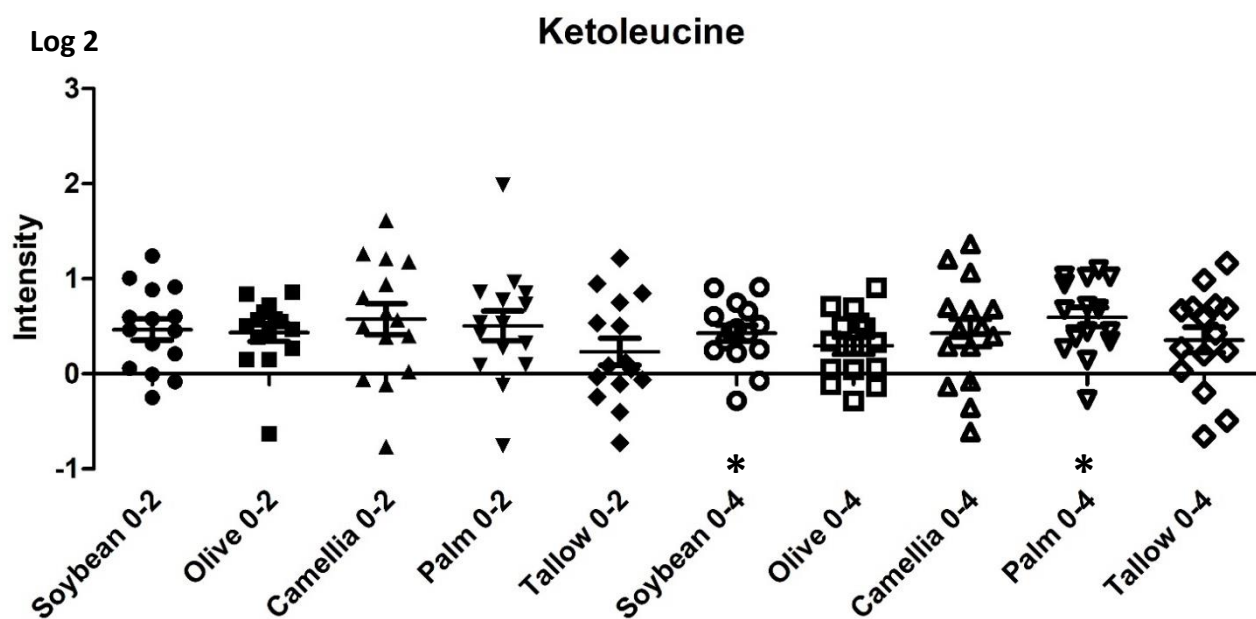
Supplemental Figure 7. Serum uracil differences between the control group (no oil added) and experimental groups (consuming various oils) after the test milkshake intake (conc). *P < 0.05; Wilcoxon sign- rank test.



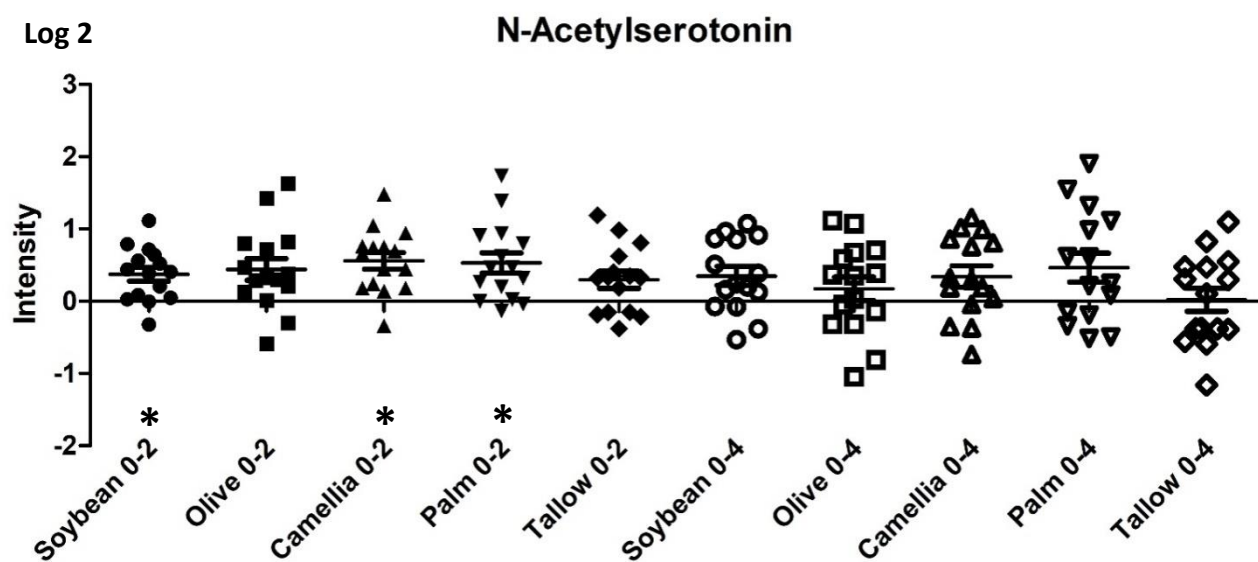
Supplemental Figure 8. Serum isoleucine differences between the control group (no oil added) and experimental groups (consuming various oils) after the test milkshake intake (conc). *P < 0.05; Wilcoxon sign- rank test.



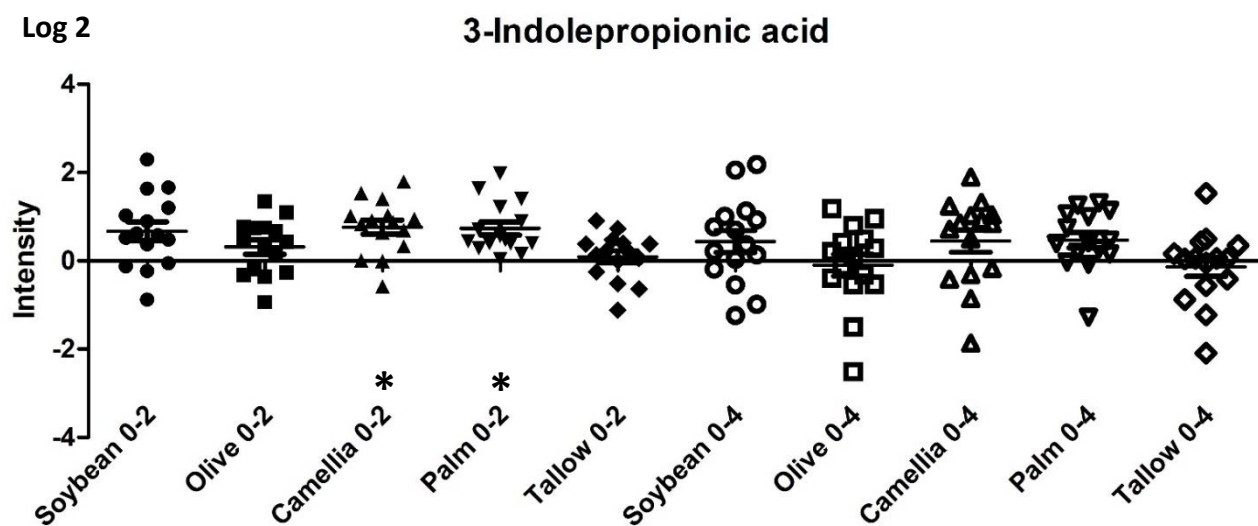
Supplemental Figure 9. Serum alloisoleucine differences between the control group (no oil added) and experimental groups (consuming various oils) after the test milkshake intake (conc). *P < 0.05; Wilcoxon sign- rank test.



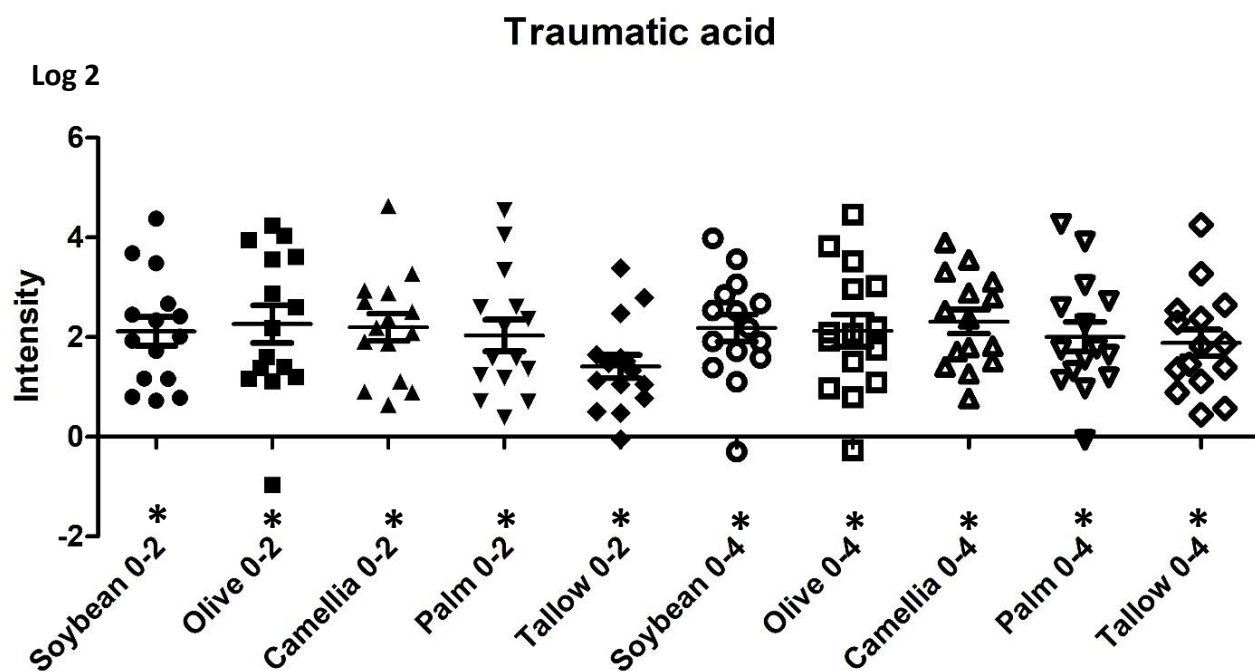
Supplemental Figure 10. Serum ketoleucine differences between the control group (no oil added) and experimental groups (consuming various oils) after the test milkshake intake (conc). * $P < 0.05$; Wilcoxon sign- rank test.



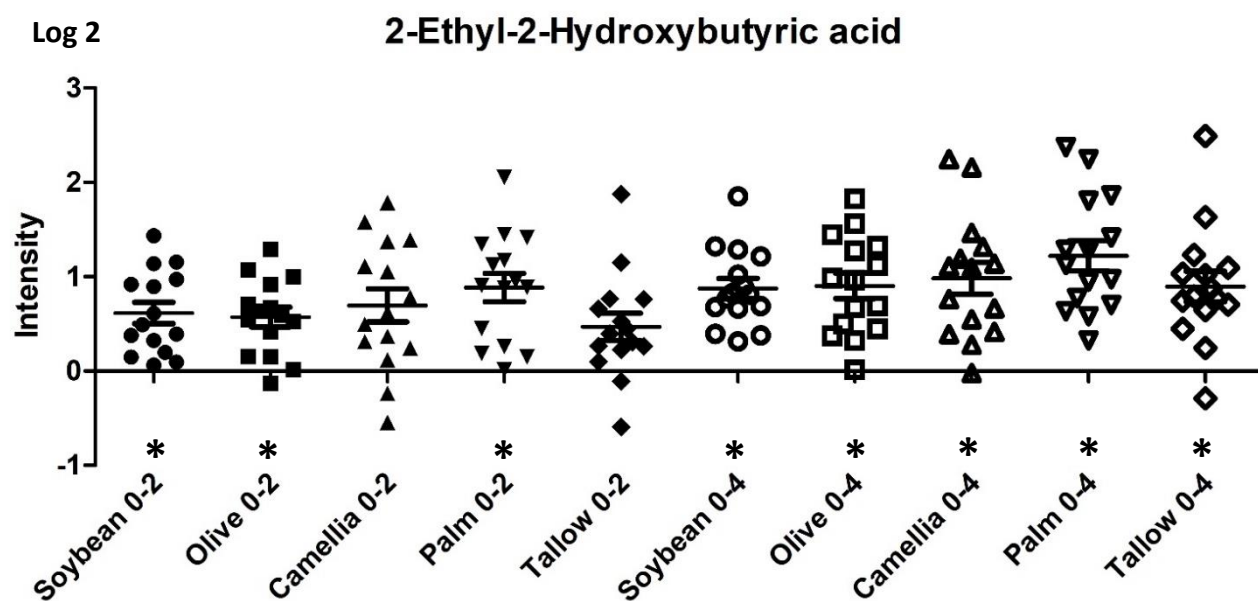
Supplemental Figure 11. Serum N-acetylserotonin differences between the control group (no oil added) and experimental groups (consuming various oils) after the test milkshake intake (conc). * $P < 0.05$; Wilcoxon sign- rank test.



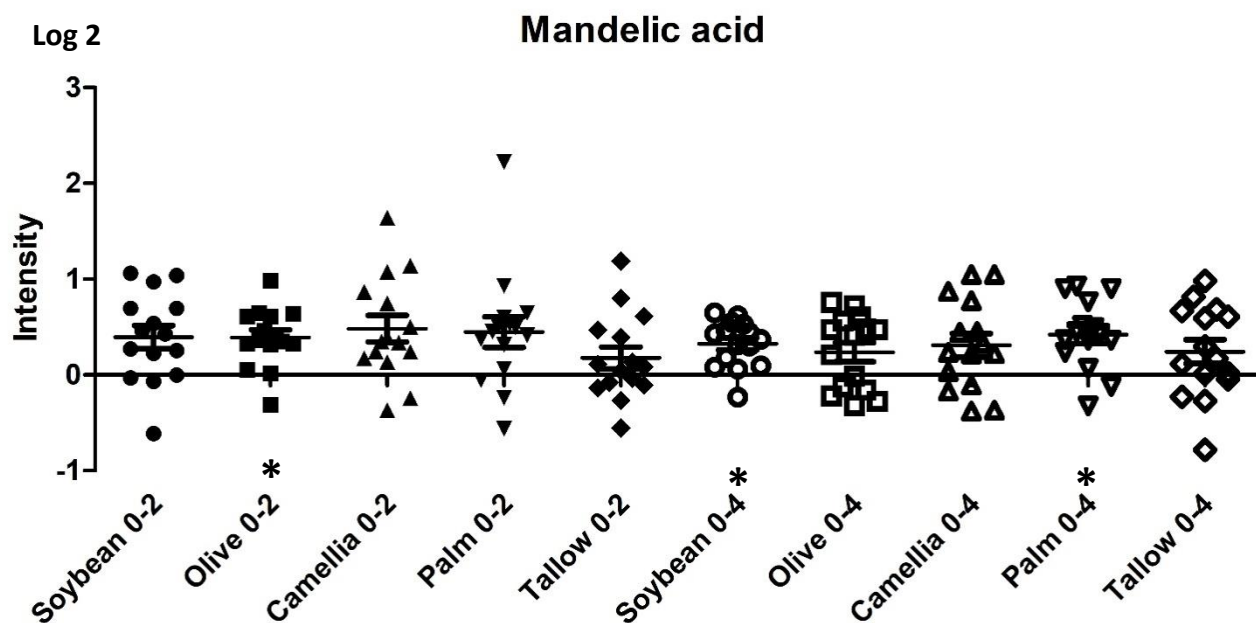
Supplemental Figure 12. Serum 3-indolepropionic acid differences between the control group (no oil added) and experimental groups (consuming various oils) after the test milkshake intake (conc.). *P < 0.05; Wilcoxon sign- rank test.



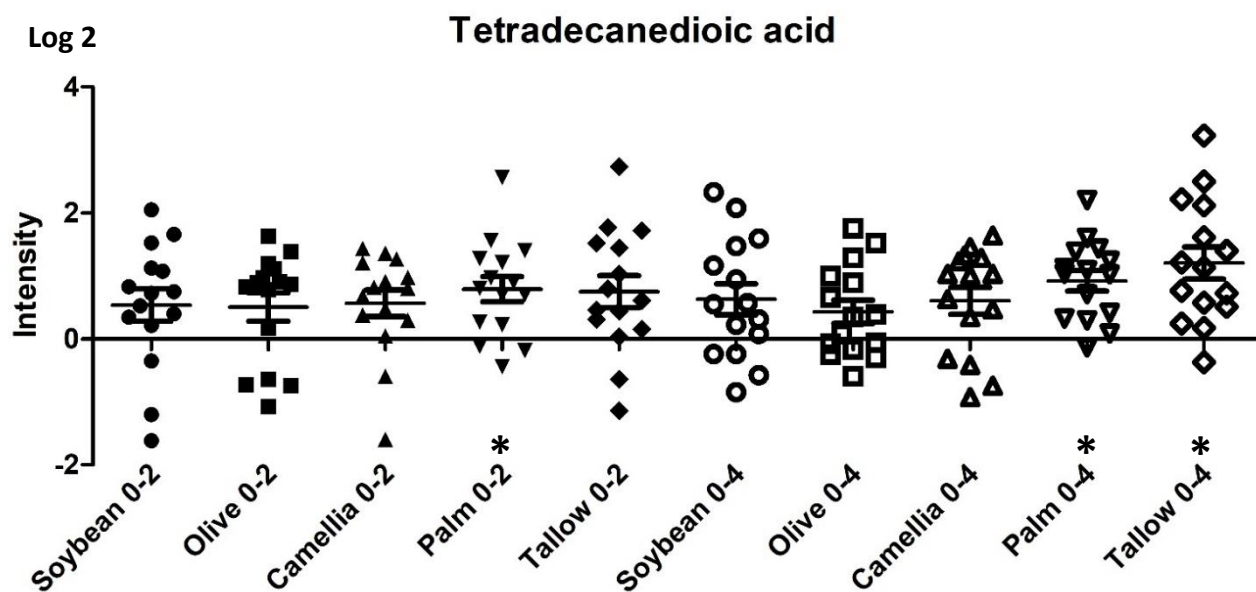
Supplemental Figure 13. Serum traumatic acid differences between the control group (no oil added) and experimental groups (consuming various oils) after the test milkshake intake (conc.). *P < 0.05; Wilcoxon sign- rank test.



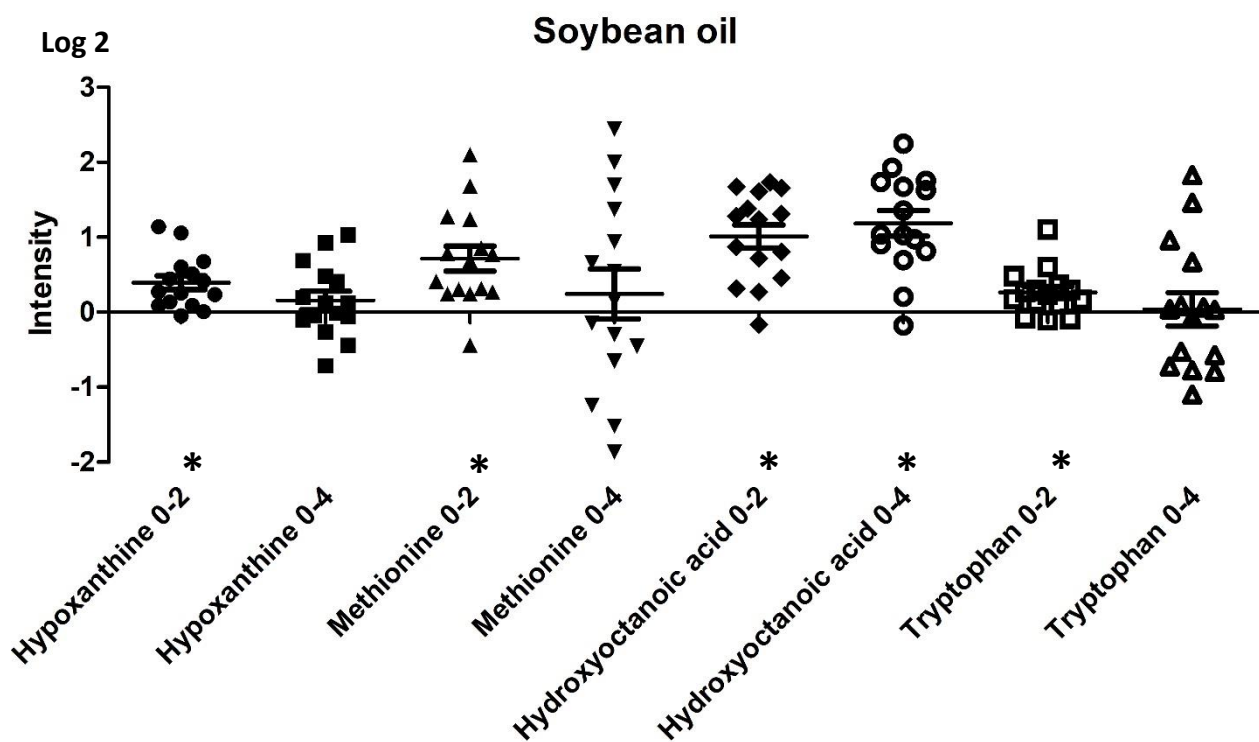
Supplemental Figure 14. Serum 2-Ethyl-2-Hydroxybutyric acid differences between the control group (no oil added) and experimental groups (consuming various oils) after the test milkshake intake (conc.). *P < 0.05; Wilcoxon sign- rank test.



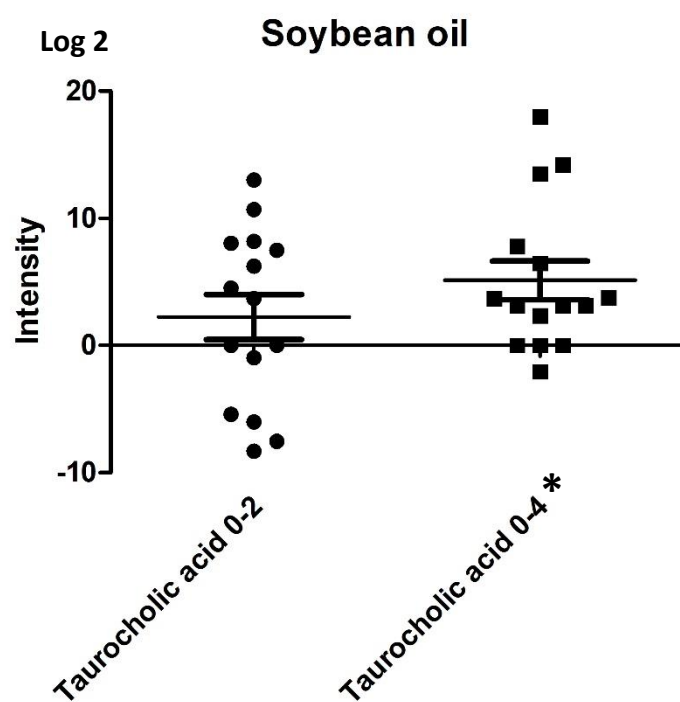
Supplemental Figure 15. Serum mandelic acid differences between the control group (no oil added) and experimental groups (consuming various oils) after the test milkshake intake (conc.). *P < 0.05; Wilcoxon sign- rank test.



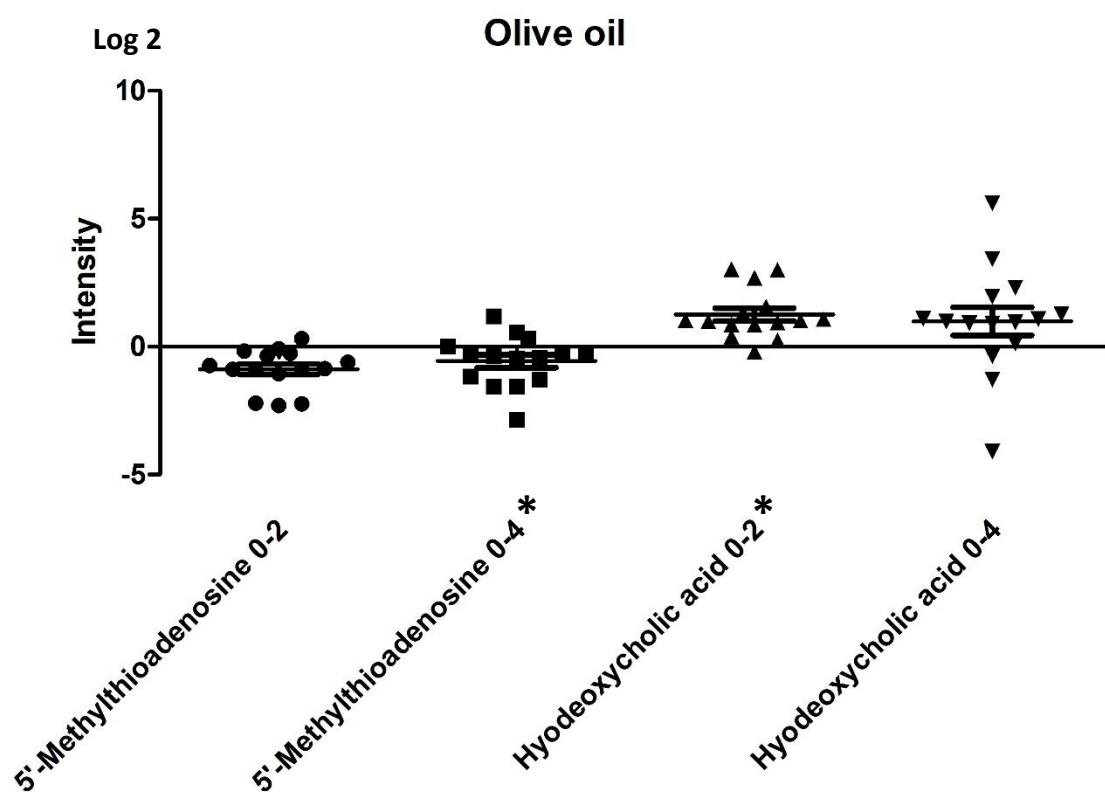
Supplemental Figure 16. Serum tetradecanedioic acid differences between the control group (no oil added) and experimental groups (consuming various oils) after the test milkshake intake (conc.). *P < 0.05; Wilcoxon sign- rank test.



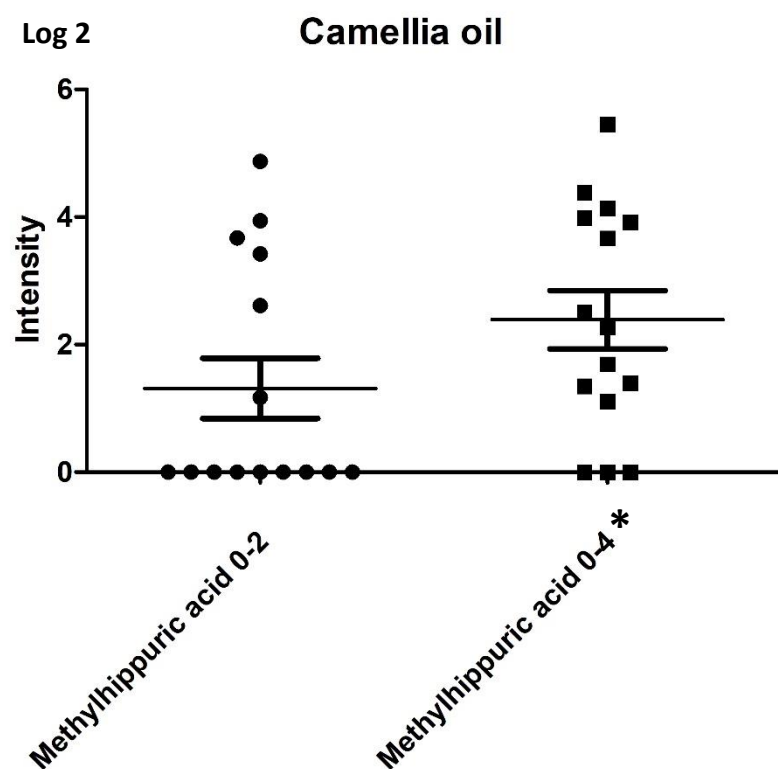
Supplemental Figure 17. Serum metabolite differences between the control group and soybean oil groups after the test milkshake intake. * $P < 0.05$; Wilcoxon sign- rank test.

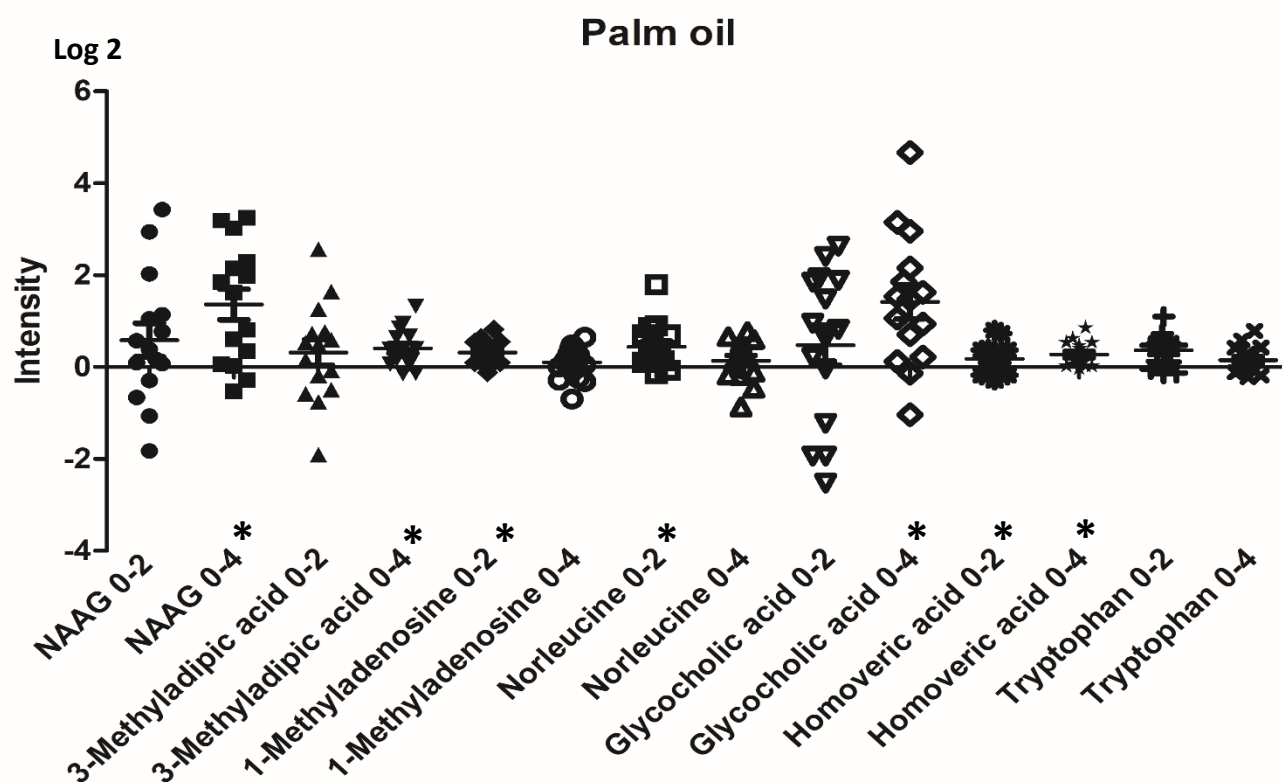


Supplemental Figure 18. Serum taurocholate differences between the control group and soybean oil groups after the test milkshake intake. * $P < 0.05$; Wilcoxon sign- rank test.

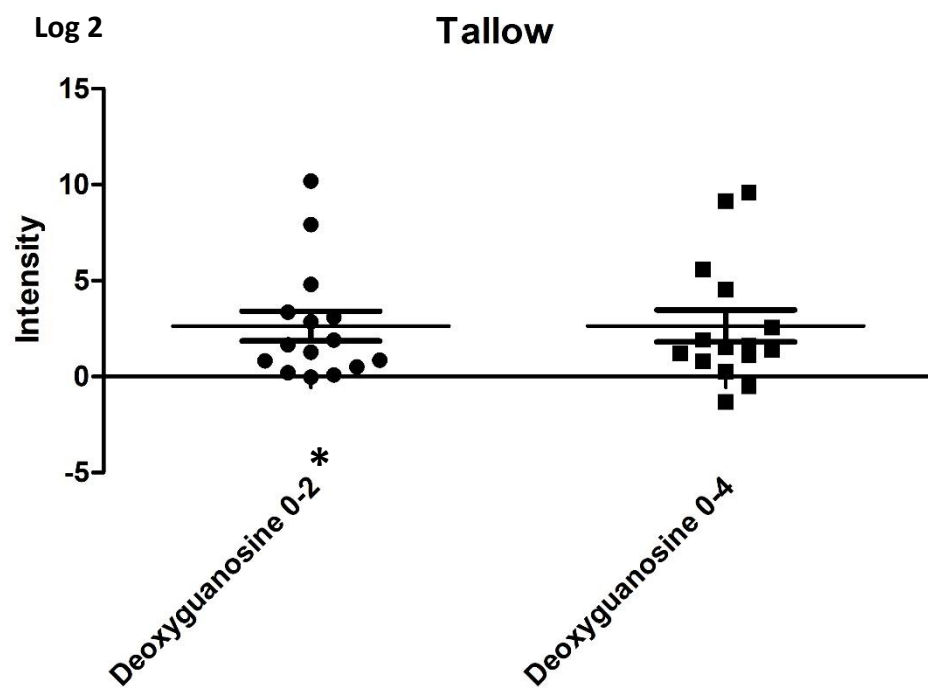


Supplemental Figure 19. Serum metabolite differences between the control group and olive oil groups after the test milkshake intake. *P < 0.05; Wilcoxon sign- rank test.

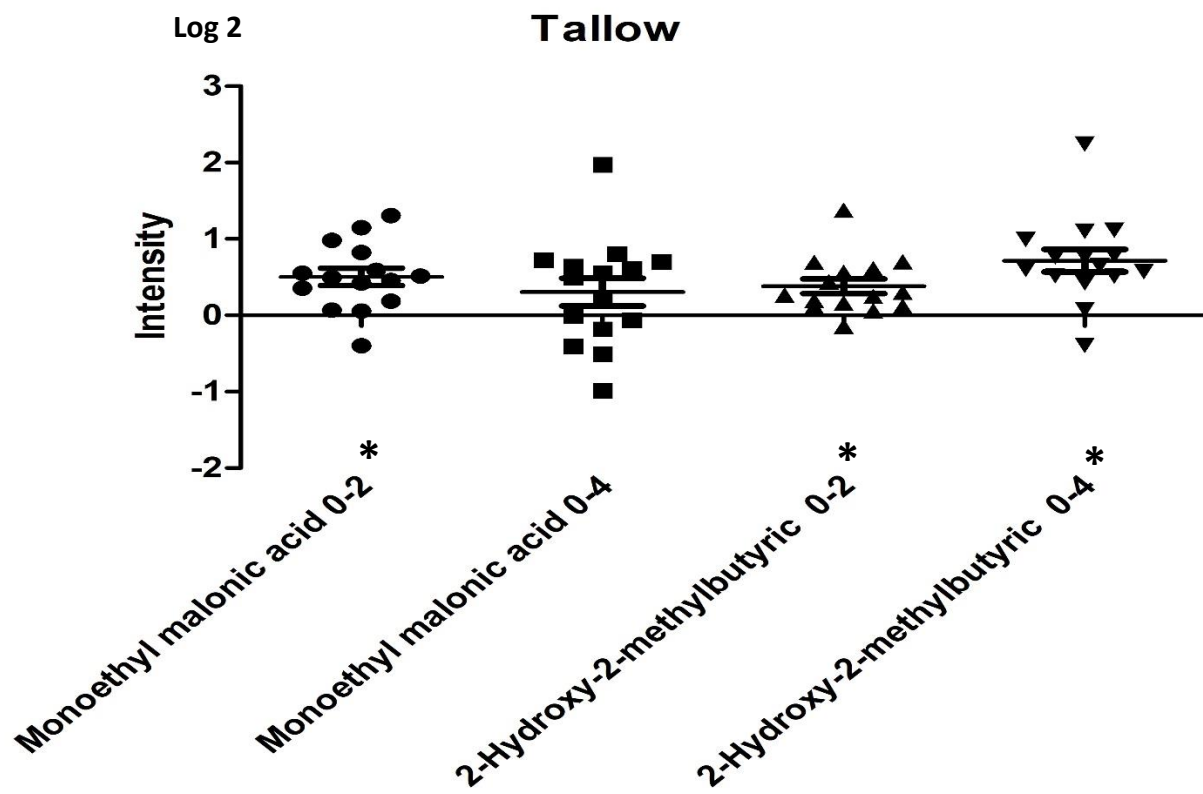




Supplemental Figure 21. Serum metabolites differences between the control group and palm oil groups after the test milkshake intake. *P < 0.05; Wilcoxon sign- rank test.



Supplemental Figure 22. Serum deoxyguanosine differences between the control group and tallow groups after the test milkshake intake. *P <0.05; Wilcoxon sign- rank test.



Supplemental Figure 23. Serum metabolites differences between the control group and tallow groups after the test milkshake intake. *P < 0.05; Wilcoxon sign- rank test.