Butter blend containing fish oil improves the level of n-3 fatty acids in biological tissues of hamster - DTU Orbit (17/12/2018)

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Many studies have shown beneficial effects of long chain n-3 polyunsaturated fatty acids (PUFA) on human health. Regardless of the positive effects of n-3 PUFA, the intake of these fatty acids remains low. An approach to increase the intake of n-3 PUFA in the population is to incorporate fish oil into food. In the present study, fish oil was incorporated into butter blends by enzymatic interesterification. The aim of the study was to investigate the effects of this butter product in comparison with a commercial butter blend and a product produced by interesterification but without fish oil. Golden Syrian hamsters received hamster feed blended with one of the three butter products. After 6 weeks of feeding, the fatty acid compositions of plasma, erythrocytes, liver, brain, and visceral fat were determined. The intake of butter product with fish oil resulted in a higher level of n-3 PUFA in plasma, erythrocytes, and liver. The incorporation of n-3 PUFA was significantly higher in phospholipids than in triacylglycerols. The results suggest that enriching butter blends with small amounts of fish oil can be used as an alternative method for improving the level of n-3 PUFA in biological tissues.

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