

Dietary supplementation with hybrid palm oil alters liver function in the common marmoset

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Hybrid palm oil, which contains higher levels of oleic acid and lower saturated fatty acids in comparison with African palm oil, has been proposed to be somehow equivalent to extra virgin olive oil. However, the biological effects of its consumption are poorly described. Here we have explored the effects of its overconsumption on lipid metabolism in a non-human primate model, the common marmoset. Dietary supplementation of marmoset with hyperlipidic diet containing hybrid palm oil for 3 months did not modify plasma lipids levels, but increased glucose levels as compared to the supplementation with African palm oil. Liver volume was unexpectedly found to be more increased in marmosets consuming hybrid palm oil than in those consuming African palm oil. Hepatic total lipid content and circulating transaminases were dramatically increased in animals consuming hybrid palm oil, as well as an increased degree of fibrosis. Analysis of liver miRNAs showed a selective modulation of certain miRNAs by hybrid palm oil, some of which were predicted to target genes

involved in cell adhesion molecules and peroxisomal pathways. Our data suggest that consumption of hybrid palm oil should be monitored carefully, as its overconsumption compared to that of African palm oil could involve important alterations to hepatic metabolism. © The Author(s) 2018.