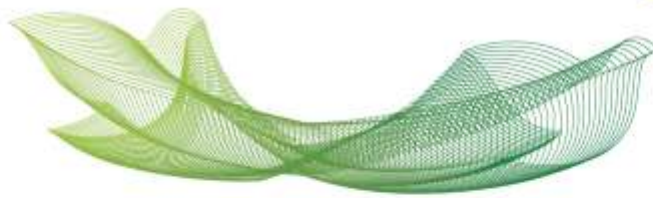




Tipo	Periódico
Título	Bio-synthesized sardine oil concentrate alters the composition of hepatic lipids in rats: A lipidomic approach
Autores	Mari Uyeda, Gustavo Henrique Bueno Duarte, Anna Maria Alves de Piloto Fernandes, Fabiano Jares Contesini, Márcia Cristina Fernandes Messias, Gabrielle Kristine Doratiotto de Santis, Karina Vieira Barros, Ana Valéria Colnaghi Simionato, Patrícia de Oliveira Carvalho
Autor (es) USF	Mari Uyeda, Anna Maria Alves de Piloto Fernandes, Márcia Cristina Fernandes Messias, Gabrielle Kristine Doratiotto de Santis, Patrícia de Oliveira Carvalho
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Resumo	Both preventive and curative therapies have created a considerable demand for n-3 PUFAs (polyunsaturated fatty acids) from fish oil, such as eicosapentaenoic (EPA) and docosahexaenoic (DHA) acids, for human use. Bio-synthesized sardine oil (bioSO) concentrate containing an acylglycerols mixture with 50% n-3 PUFAs was obtained by <i>Candida cylindracea</i> lipase hydrolysis and subsequently used for in vivo tests in animals. Wistar rats received, by gavage, a dose of 0.2 g/kg/day of bioSO or unmodified sardine oil (unSO) or saline solution (control) for three consecutive days and the liver tissue was evaluated by a selective and sensitive lipidomic approach based on ultra-performance liquid chromatography quadruple time-of-flight mass spectrometry (UPLC-QTOF-MSE) and gas chromatography (GC). In addition, antioxidant parameters, response of oxidative stress marker and estimated fatty acid desaturase indexes were determined. The use of bioSO led to an increase in Cer d18:1/16:0, PE-Cer d14:2/18:0 and highly unsaturated phosphatylcholines (PC 38:4, PC 40:6 and PC 42:8) in the hepatic tissue membranes. There was also an increase in DHA incorporation in animals that received bioSO in comparison with the control animals. No differences in superoxide dismutase and catalase activity levels were observed between the groups, and malondialdehyde levels and delta 5-desaturase activity were higher in animals supplemented with bioSO. These results indicate that bioSO increase the hepatic incorporation of DHA, especially those esterified



	as PCs, and are probably absorbed and transported more effectively than the unSO. Enzymatically hydrolyzed compounds containing antioxidants may be a viable alternative for obtaining n-3 PUFA-enriched functional lipids.
Fomento	