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Inhibition of 12/15-LOX activity and ceramide pattern in the murine brain

Fiedorowicz A.[1], Car H.[1]*, Prokopiuk S.[1], Sacharzewska E.[2], Żendzian-Piotrowska M.[3], Kowal K.[4]

[1] Department of Experimental Pharmacology, Medical University of Bialystok, Poland
[2] Center of Experimental Medicine, Medical University of Bialystok, Poland
[3] Department of Physiology, Medical University of Bialystok, Poland
[4] Department of Allergology and Internal Medicine, Medical University of Bialystok Poland

ABSTRACT

Purpose: The 12/15-lipoxygenase (12/15-LOX) activity and the ceramide content are often elevated in neurodegenerative disorders; however their relationship in the brain is not established. To verify whether blocking of 12/15-LOX activity has an impact on ceramide pattern in the brain we inhibited the 12/15-LOX expression by administration of baicalein in mice.

Materials and methods: The ceramides containing fatty acid methyl esters were analyzed using gas–liquid chromatography (GLC) technique.

Results: The total ceramide content increased in baicalein-treated animals comparing to controls and the levels of most ceramide-fatty acids of SAFA, MUFA and PUFA tended to increase in relation to control. Baicalein treatment up-regulated significantly only the ceramide-lignoceric fatty acid in relation to controls.

Conclusion: We have shown in this study that 12/15-LOX inhibition slightly alters the pattern of ceramides in the mouse brain.

Key words: 12/15-lipoxygenase; ceramide; baicalein; mice