

Brain Gangliosides Profile in Ovariectomized Mice Compared With their Age

Santana, H. S.¹ ; Musso, A.A. ¹; Fonseca, A. M. S.¹ ; Lopes, R. P.¹ ; Pereira, F.D.¹ ; Bicudo, N.E.¹ ; Magalhães, L. S.¹ ; Vargas, N. V.¹ ; Santos R. T.¹ ;Silva, I.V; Nimrichter L.²

¹ Department of Morphology, CCS-UFES, ES, Brazil.

² Institute Microbiology, CCS-UFRJ, RJ, Brazil.

INTRODUCTION: Gangliosides are sialic acid containing glycosphingolipids (GSLs) expressed primarily, in the outer leaflet of the plasma membrane of cells. Those GSLs are particularly abundant in the nervous system where they play several roles such as, brain development, myelin formation, and neuronal survival. GSLs have been, also, associated with some neurodegenerative diseases such as Alzheimer's disease (AD).

OBJECTIVE: It is well known that APOE gene is the major risk factor for sporadic AD. In this work, we aimed to check GSLs profile in two animal models, the Apolipoprotein E knock-out (ApoEKO) in mice and ovariectomized (OVX) controls animals (C57Bl6 or WT). **MATERIAL AND METHODS:** Both APOEKO and their controls (WT) were ovariectomized at 6 months old. SHAM surgeries were performed in some animals to simulated operatory stress. All mice were kept alive for 6 or 12, then sacrificed and their brain collected. Whole brain were used for lipid extraction and purification specific to GSLs (Nimrichter, L. 2008). Thin Layer Chromatography (TLC) and Mass Spectrometry (MS) then, analyzed GSLs. **DISCUSSION AND RESULTS:** Qualitative data obtained by TLC revealed 5 main GSL (GM1, GD3, GD1a, GD1b, GT1b). Densitometric analysis of the main bands have shown an increase in GM1, GD3, GD1a APOEKO when compared to WT (2 fold). Ongoing experiments using MS have shown by-products CSLs, such as hydroxy-ceramide. **CONCLUSION:** Our data suggest that APOEKO exhibited an increase in GSL production. Preliminary data have also shown that fragments of GSLs, such as ceramide derivatives, usually involved in apoptosis, may be present in brain lipid extracts. Further experiments are being conducted at this time to corroborate these data.

Keyword: Gangliosides, ApoEKO, Ovariectomized, Apoptosis.

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