

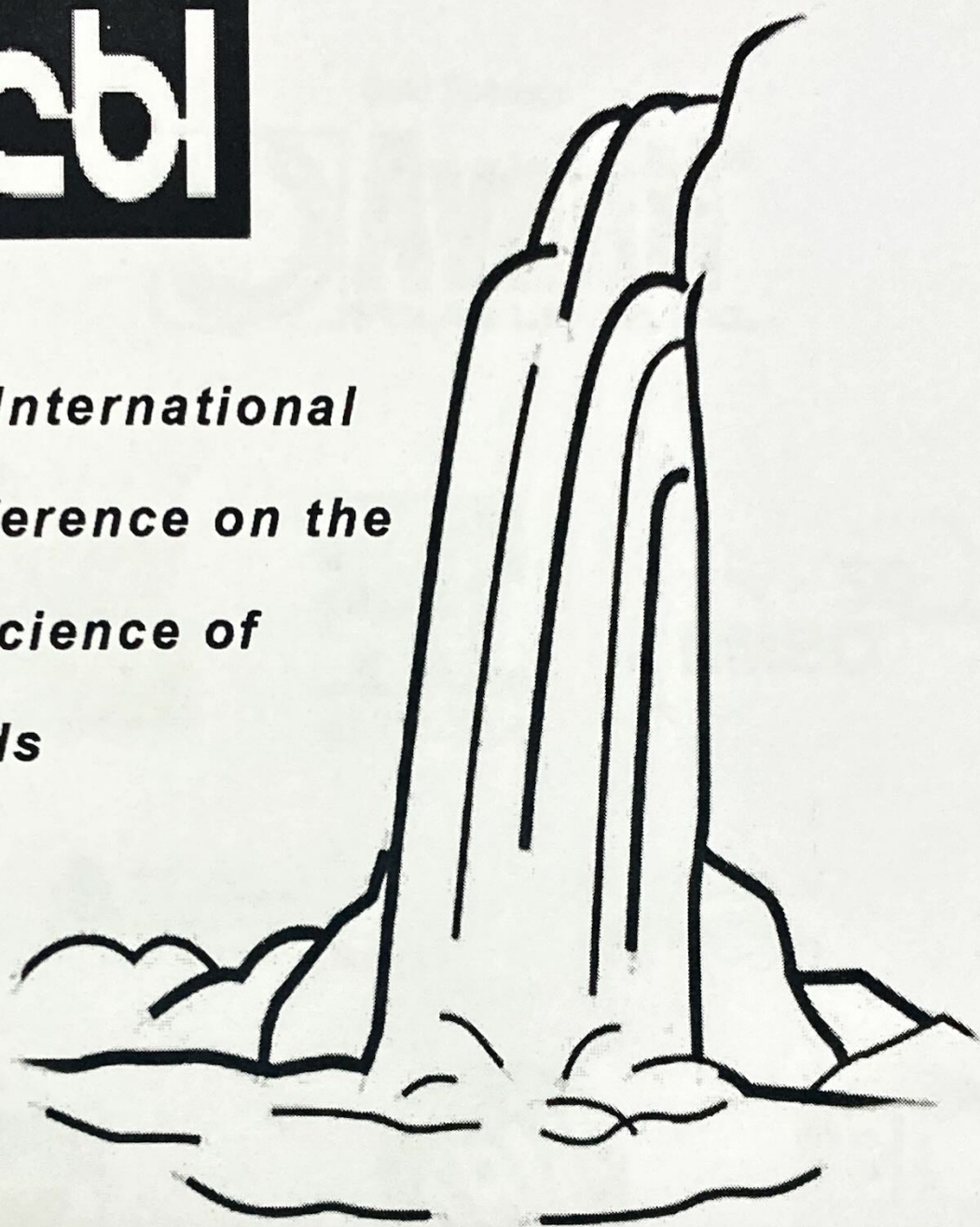
56th International Conference on the Bioscience of Lipids



22- 26 September 2015
Puerto Iguazú, Misiones
República Argentina



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P04- SPHINGOMYELINS AND CERAMIDES WITH VERY-LONG-CHAIN PUFA IN MEMBRANE FRACTIONS AND DOMAINS FROM RAT SPERMATOGENIC CELLS.

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Sphingomyelins (SM) and ceramides (Cer) with nonhydroxy and 2-hydroxy very-long-chain PUFA (n-V and h-V) are specific components of rat spermatogenic cells, including pachytene spermatocytes and round spermatids. Here we evaluated how these lipids distribute among membrane fractions prepared from these germ cells in comparison with glycerophospholipids (GPL) and cholesterol. A small light (L) and a large heavy (H) membrane fractions, both derived from the cell plasma membrane, were isolated a detergent-free procedure, as well as a fraction containing intracellular membranes, used for comparison. Flotillin-1, a protein typical of raft membrane domains, was highly concentrated in the L fraction. Additionally, by using Triton X-100, detergent-resistant and detergent-soluble membrane (DRM and DSM, respectively) fractions were obtained in order to compare results. The small L and DRM fractions were similar in that both displayed a higher percentage of SM and cholesterol than the corresponding H and DSM fractions. The SM from the L and DRM fractions was rich in saturated fatty acids (SFA), whereas that of H and DSM fractions contained most of the n-V and h-V. The GPL followed the same trend, as the L and DRM fractions contained mostly SFA and mostly PUFA, respectively. Interestingly, DRM, but not L, contained Cer with high proportion of n-V and h-V, suggesting detergent-resistant properties of these unusual lipids. Thus, the L and DRM fractions from germ cells exhibit biochemical similarities in that they exclude SM with n-V and h-V, indicating that these species are not components of raft membrane domains. The intracellular membrane fraction in the detergent-free method contained most of the n-V and h-V Cer species of the cells, likely precursors of the SM that in due course will be biosynthesized and transferred to the H fraction of the plasma membrane.