



cells



*Special Issue Reprint*

## Sphingolipids

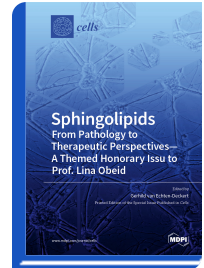
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Although sphingolipids are ubiquitous components of cellular membranes, their abundance in cells is generally lower than glycerolipids or cholesterol, representing less than 20% of total lipid mass. Following their discovery in the brain—which contains the largest amounts of sphingolipids in the body—and first description in 1884 by J.L.W. Thudichum, sphingolipids have been overlooked for almost a century, perhaps due to their complexity and enigmatic nature. When sphingolipidoses were discovered, a series of inherited diseases caused by enzyme mutations involved in sphingolipid degradation returned to the limelight. The essential breakthrough came decades later, in the 1990s, with the discovery that sphingolipids were not just structural elements of cellular membranes but intra- and extracellular signaling molecules. It turned out that their lipid backbones, including ceramide and sphingosine-1-phosphate, had selective physiological functions. Thus, sphingolipids emerged as essential players in several pathologies including cancer, diabetes, neurodegenerative disorders, and autoimmune diseases. The present volume reflects upon the unexpectedly eclectic functions of sphingolipids in health, disease, and therapy. This fascinating lipid class will continue to be the subject of up-and-coming future discoveries, especially with regard to new therapeutic strategies.



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