

# Therapeutic Platform of Bioactive Lipids

Focus on Cancer



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Chapter

# Ceramide: A Sphingolipidic Weapon Against Cancer

*By Suvadeep Mal, Udit Malik, Suman Das, Sudhir Kumar Paidesetty*

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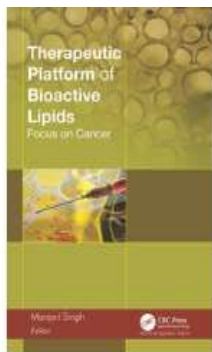
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### ABSTRACT

Ceramide is the hydrophobic lipid of the stratum corneum, which provides the first line of defense against xenobiotics and harmful pathogens and provides cell adhesion, and skin moisturizing property epidermal differentiation. Ceramide forms the backbone of sphingolipids, and it is composed of a fatty acid (FA) with varying chain lengths and long-chain bases (LCB). Ceramide and sphingolipid together or alone mediate some critical cellular pathways like lipid microdomain formation, cell apoptosis, survival, autophagy, etc. After being generated by sphingomyelinase or de-novo or salvage pathway, Ceramide transferred to lipid membrane to maintain skin topology and to function or induce intracellular apoptotic pathways. The physiological action of ceramide in cancer prevention via apoptosis induction has been thoroughly studied over the past decades. Still, the metabolites of ceramides 4can effectively stimulate cell proliferation and cell growth. This chapter will discuss the ceramides with their generation and their signaling pathways to defend against cancer.