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2-Hydroxyoleic Acid

National Cancer Institute

Source

National Cancer Institute. *2-Hydroxyoleic Acid*. NCI Thesaurus. Code C105401.

An orally bioavailable, synthetic analog of the fatty acid oleic acid, with potential antitumor activity. Upon administration, 2-hydroxyoleic acid (2OHOA) activates sphingomyelin synthase (SMS), thereby increasing the concentration of sphingomyelin (SM) and diacylglycerol (DAG) in the tumor cell membrane and decreasing membrane levels of phosphatidylethanolamine (PE) and phosphatidylcholine (PC). This restores the normal, healthy levels and ratios of membrane lipids. By restoring normal membrane lipid structure and composition, this agent inhibits membrane-protein associated signaling and the aberrant activity of signaling pathways in certain tumor cells, including the Ras/MAPK and PI3K/Akt pathways. This inhibits tumor cell proliferation, induces tumor cell differentiation, and eventually can cause cell death.