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 1: [FASEB J.](#) 2001 Mar; 15(3):807-14.**Ceramide induces aSMase expression: implications for oxLDL-induced apoptosis.**[Deigner HP](#), [Claus R](#), [Bonaterra GA](#), [Gehrke C](#), [Bibak N](#), [Blaess M](#), [Cantz M](#), [Metz J](#), [Kinscherf R](#).

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Sphingomyelinase (SMase) stimulation and subsequent ceramide generation are suggested to be involved in signal transduction of stress-induced apoptosis. We now show that apoptosis of human macrophages (MPhi) and fibroblasts initiated by oxidized low density lipoproteins (minimally modified LDL, mmLDL) is associated with an increase in acid SMase (aSMase, E.C. 3.1.4.12) expression and ceramide concentration. Application of a novel, potent, and specific inhibitor of aSMase expression (NB6) diminished the effects of mmLDL and C6-ceramide treatment by inhibiting transcription via Sp1 and AP-2. Moreover, apoptosis was abolished after mmLDL and C6-ceramide treatment of hereditary aSMase-deficient fibroblasts (from Niemann-Pick patients). We suggest that in mmLDL-initiated apoptosis 1) enhanced ceramide generation via aSMase appears to be required as well as 2) a positive feedback control of aSMase expression by the increase in intracellular ceramide concentration.

PMID: 11259399 [PubMed - indexed for MEDLINE]

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