

Anti-SCAP Antibody, clone 9D5 clone 9D5, from mouse

Art. ID SAF-MABS1249

Unit EA

Description

Sterol regulatory element-binding protein cleavage-activating protein (UniProt P97260, also known as SCAP, SREBP cleavage-activating protein) is encoded by the SCAP gene (Gene ID 100689048) in hamster species. SCAP mediates the activation of membrane-bound transcription factors SREBPs (sterol-regulatory element binding proteins) for transcribing genes encoding cholesterol biosynthetic enzymes. In sterol-deprived cells, SCAP escorts SREBPs from ER to Golgi, where active fragments of SREBPs are released from membrane by proteolysis. Sterol accumulation induces a negative regulatory mechanism, where SCAP becomes bound by Insigs and trapped in the ER, preventing further delivery of SREBPs to the Golgi for proteolytic release. SCAP spans the ER membrane eight times (a.a. 19-39, 280-300, 313-333, 345-365, 402-422, 424-444, 519-539, 709-729) with 4 luminal and 5 cytoplasmic regions, having both its N- and C-terminal ends at the cytoplasmic side (a.a. 1-18 & 730-1276). The C-terminal domain of SCAP mediates association with SREBPs, while transmembrane helices 2-6 comprise the sterol-sensing domain that mediates sterol-induced binding of SCAP to Insigs. Mutations within the sterol-sensing region disrupt Insig binding and prevent sterol-mediated ER retention of SCAP-SREBP.