SANTA CRUZ BIOTECHNOLOGY, INC.

MAL (E-1): sc-390687

BACKGROUND

MAL (myelin and lymphocyte protein), also known as T lymphocyte maturation-associated protein, is a nonglycosylated hydrophobic integral membrane protein belonging to the MAL family of proteolipids. MAL is highly enriched in nervous system myelin and in rafts and apical membranes of epithelial cells. It is involved in forming, stabilizing and maintaining glycosphingolipid-enriched membrane microdomains. MAL maintains the myelin sheath and, by controlling the sorting and trafficking of oligodendrocytes, it is involved in central nervous system paranode maintenance. MAL is a component of lipid rafts in myelinating cells. Association with glycosphingolipids may result in protein-lipid microdomain formation in myelin. MAL has been localized to the endoplasmic reticulum of T cells and in compact myelin of cells in the nervous system. MAL is primarily expressed by oligodendrocytes and Schwann cells in the intermediate and late stages of T cell differentiation.

CHROMOSOMAL LOCATION

Genetic locus: MAL (human) mapping to 2q11.1.

SOURCE

MAL (E-1) is a mouse monoclonal antibody raised against amino acids 61-130 mapping within an internal region of MAL of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MAL (E-1) is available conjugated to agarose (sc-390687 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390687 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390687 PE), fluorescein (sc-390687 FITC), Alexa Fluor® 488 (sc-390687 AF488), Alexa Fluor® 546 (sc-390687 AF546), Alexa Fluor® 594 (sc-390687 AF594) or Alexa Fluor® 647 (sc-390687 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390687 AF680) or Alexa Fluor® 790 (sc-390687 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

MAL (E-1) is recommended for detection of MAL of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MAL siRNA (h): sc-44785, MAL shRNA Plasmid (h): sc-44785-SH and MAL shRNA (h) Lentiviral Particles: sc-44785-V.

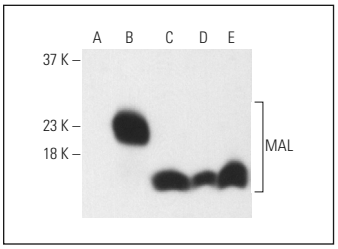
Molecular Weight of MAL: 17 kDa.

Positive Controls: SUP-T1 whole cell lysate: sc-364796 or MOLT-4 cell lysate: sc-2233.

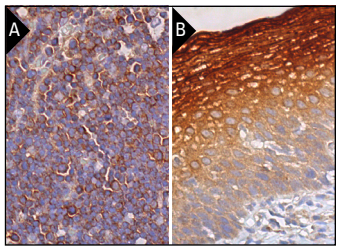
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



MAL (E-1): sc-390687. Western blot analysis of MAL expression in non-transfected 293T (**A**), human MAL transfected 293T (**B**), SUP-T1 (**C**), MOLT-4 (**D**) and RPMI-8226 (**E**) whole cell lysates. Detection reagent used: m-IgG_{2b} BP-HRP: sc-542741.



MAL (E-1): sc-390687. Immunoperoxidase staining of formalin fixed, paraffin-embedded human fetal thymus tissue showing cytoplasmic and membrane staining of medullary cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human tonsil tissue showing cytoplasmic and membrane staining of squamous epithelial cells (**B**).

SELECT PRODUCT CITATIONS

1. Gentry, M., et al. 2017. Performance of a commercially available MAL antibody in the diagnosis of primary mediastinal large B-cell lymphoma. Am. J. Surg. Pathol. 41: 189-194.
2. Blanch, M., et al. 2018. The cytotoxicity of ε toxin from clostridium perfringens on lymphocytes is mediated by MAL protein expression. Mol. Cell. Biol. 38: e00086-18.
3. Yang, L.T., et al. 2020. Restoration of MAL overcomes the defects of apoptosis in lung cancer cells. PLoS ONE 15: e0227634.
4. Dorca-Arévalo, J., et al. 2020. Lung endothelial cells are sensitive to ε toxin from *Clostridium perfringens*. Vet. Res. 51: 27.
5. Jacquier, A., et al. 2020. Immunohistochemistry with anti-MAL antibody and RNAscope with MAL probes are complementary techniques for diagnosis of primary mediastinal large B-cell lymphoma. J. Clin. Pathol. 74: 396-399.
6. Geng, Z., et al. 2021. ε toxin from *Clostridium perfringens* induces toxic effects on skin tissues and HaCaT and human epidermal keratinocytes. Toxicon 198: 102-110.
7. Zorzan, E., et al. 2022. Hypermethylation-mediated silencing of CIDEA, MAL and PCDH17 tumour suppressor genes in canine DLBCL: from multi-omics analyses to mechanistic studies. Int. J. Mol. Sci. 23: 4021.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.