

HDEL (2E7): sc-53472

BACKGROUND

The HSP 70 family comprises four highly conserved proteins, HSP 70, HSC 70, GRP 75 and GRP 78, which serve a variety of roles. They act as molecular chaperones, facilitating the assembly of multi-protein complexes; participate in the translocation of polypeptides across cell membranes and to the nucleus; and aid in the proper folding of nascent polypeptide chains. GRP 78 is localized in the endoplasmic reticulum (ER), where it receives imported secretory proteins and is involved in the folding and translocation of nascent peptide chains. The yeast GRP 78 protein, also designated BiP, contains a C-terminal HDEL sequence, against which the 2E7 monoclonal antibody was raised. The 2E7 clone recognizes the C-terminal peptide HDEL, a common version of the endoplasmic reticulum retention signal found in yeast, plant, nematode and other ER proteins. 2E7 specifically stains HDEL proteins in maize, onion, barnyard grass, beet, cotton, mung bean, sorghum and wheat.

CHROMOSOMAL LOCATION

Genetic locus: KDELR1 (human) mapping to 19q13.33; Kdelr1 (mouse) mapping to 7 B4.

SOURCE

HDEL (2E7) is a mouse monoclonal antibody raised against a synthetic HDEL peptide corresponding to the C-terminus of BiP of *S. cerevisiae* 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.

HDEL (2E7) is available conjugated to agarose (sc-53472 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53472 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53472 PE), fluorescein (sc-53472 FITC), Alexa Fluor[®] 488 (sc-53472 AF488), Alexa Fluor[®] 546 (sc-53472 AF546), Alexa Fluor[®] 594 (sc-53472 AF594) or Alexa Fluor[®] 647 (sc-53472 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-53472 AF680) or Alexa Fluor[®] 790 (sc-53472 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

HDEL (2E7) is recommended for detection of microsomal membrane proteins of mouse, rat, human, *Saccharomyces cerevisiae*, *Drosophila melanogaster* and *Arabidopsis thaliana* origin by Western Blotting (starting dilution 1:200, 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) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of HDEL: 78 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, U266 whole cell lysate: sc-364800 or 3T3-L1 cell lysate: sc-2243.

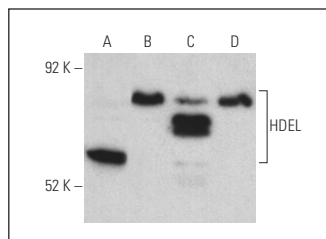
RESEARCH USE

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

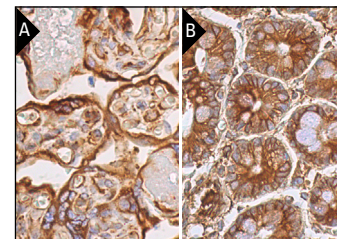
STORAGE

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

DATA



HDEL (2E7) HRP: sc-53472 HRP. Direct western blot analysis of HDEL expression in 3T3-L1 (A), HeLa (B), U266 (C) and MDA-MB-231 (D) whole cell lysates.



HDEL (2E7): sc-53472. Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic staining of trophoblastic cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells and interstitial cells (B).

SELECT PRODUCT CITATIONS

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- Elschami, M., et al. 2013. Reduction of Stat3 expression induces mitochondrial dysfunction and autophagy in cardiac HL-1 cells. *Eur. J. Cell Biol.* 92: 21-29.
- Grillitsch, K., et al. 2014. Isolation and characterization of the plasma membrane from the yeast *Pichia pastoris*. *Biochim. Biophys. Acta* 1838: 1889-1897.
- Chen, X., et al. 2016. Regulation of CED-3 caspase localization and activation by *C. elegans* nuclear-membrane protein NPP-14. *Nat. Struct. Mol. Biol.* 23: 958-964.
- Livanos, P., et al. 2017. Ros homeostasis as a prerequisite for the accomplishment of plant cytokinesis. *Protoplasma* 254: 569-586.
- Roth, G., et al. 2018. Fate of the UPR marker protein Kar2/Bip and autophagic processes in fed-batch cultures of secretory Insulin precursor producing *Pichia pastoris*. *Microb. Cell Fact.* 17: 123.
- Giannoutsou, E., et al. 2019. De-esterified homogalacturonan enrichment of the cell wall region adjoining the preprophase cortical cytoplasmic zone in some protodermal cell types of three land plants. *Int. J. Mol. Sci.* 21: 81.
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PROTOCOLS

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