

KDEL ER Marker (10C3): sc-58774

BACKGROUND

Misfolded proteins in the endoplasmic reticulum (ER) evoke the ER stress response. ER chaperones and misfolded proteins exit to the secretory pathway and are retrieved to the ER, during which process the KDEL ER tag plays an important role. KDEL represents an ER C-terminal tetrapeptide retention signal (Lys-Asp-Glu-Leu). This specific tag blocks the secretion of proteins. The ER retention of these proteins is accomplished via a pathway involving the binding of escaped proteins through KDEL tags to a KDEL receptor in a post-ER compartment. The protein-receptor complex is then transported back to the ER. KDEL2 is one of the receptors that cycle between the Golgi apparatus and the ER, returning proteins containing the KDEL signal to the ER. This can be useful in a research setting, since a target protein containing the KDEL ER retention signal can be coexpressed with KDEL2 and it will be redistributed to the ER.

REFERENCES

- Hsu, V.W., et al. 1992. A brefeldin A-like phenotype is induced by the over-expression of a human ERD-2-like protein, ELP-1. *Cell* 69: 625-635.
- Lewis, M.J., et al. 1992. Sequence of a second human KDEL receptor. *J. Mol. Biol.* 226: 913-916.
- Schweizer, A., et al. 1993. A luminal calcium-binding protein with a KDEL endoplasmic reticulum retention motif in the ER-Golgi intermediate compartment. *Eur. J. Cell Biol.* 60: 366-370.
- Monnat, J., et al. 1998. Dictyostelium discoideum protein disulfide isomerase, an endoplasmic reticulum resident enzyme lacking a KDEL-type retrieval signal. *FEBS Lett.* 418: 357-362.

SOURCE

KDEL ER Marker (10C3) is a mouse monoclonal antibody raised against amino acids 649-654 of GRP 78 of rat origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

KDEL ER Marker (10C3) is recommended for detection of proteins containing the SEKDEL sequence in mammals, birds, insects and plants; recognises GPR78 and GPR94 with particular prominence 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Positive Controls: HeLa whole cell lysate: sc-2200, rat liver extract: sc-2395 or Hep G2 cell lysate: sc-2227.

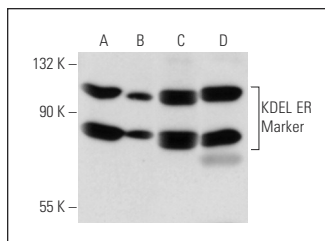
STORAGE

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

RESEARCH USE

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

DATA



KDEL ER Marker (10C3): sc-58774. Western blot analysis of KDEL ER Marker expression in HeLa (A), HEK 294 (B) and Hep G2 (C) whole cell lysates and rat liver tissue extract (D).

SELECT PRODUCT CITATIONS

- Croxatto, A. and Greub, G. 2010. Early intracellular trafficking of *Waddlia chondrophila* in human macrophages. *Microbiology* 156: 340-355.
- Petrasek, J., et al. 2013. STING-IRF3 pathway links endoplasmic reticulum stress with hepatocyte apoptosis in early alcoholic liver disease. *Proc. Natl. Acad. Sci. USA* 110: 16544-16549.
- Romero, A.M., et al. 2014. Chronic alcohol exposure affects the cell components involved in membrane traffic in neuronal dendrites. *Neurotox. Res.* 27: 43-54.
- Omi, T., et al. 2014. Fluvoxamine alleviates ER stress via induction of σ -1 receptor. *Cell Death Dis.* 5: e1332.
- Osz, K., et al. 2014. The thrombospondin-1 receptor CD36 is an important mediator of ovarian angiogenesis and folliculogenesis. *Reprod. Biol. Endocrinol.* 12: 21.
- Dikopoltsev, E., et al. 2014. FBXO22 protein is required for optimal synthesis of the N-methyl-D-aspartate (NMDA) receptor coagonist D-serine. *J. Biol. Chem.* 289: 33904-33915.
- Romero, A.M., et al. 2015. Chronic alcohol exposure affects the cell components involved in membrane traffic in neuronal dendrites. *Neurotox. Res.* 27: 43-54.
- Nakakido, M., et al. 2016. Phosphatidylinositol glycan anchor biosynthesis, class X containing complex promotes cancer cell proliferation through suppression of EHD2 and ZIC1, putative tumor suppressors. *Int. J. Oncol.* 49: 868-876.
- Li, Y., et al. 2017. Inhibition of endoplasmic reticulum stress signaling pathway: a new mechanism of statins to suppress the development of abdominal aortic aneurysm. *PLoS ONE* 12: e0174821.

PROTOCOLS

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