SANTA CRUZ BIOTECHNOLOGY, INC.

ORP150 (C-9): sc-398110

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

ORP150, also known as HYOU1 (hypoxia upregulated 1), is a 999 amino acid protein that localizes to the lumen of the endoplasmic reticulum (ER) and is a member of the heat shock protein 70 (HSP 70) family. ORP150 is highly expressed in tissues that have well-developed ERs and a large number of secretory proteins (such as liver and pancreas). It is expressed at lower levels in kidney and brain, and plays an essential role in cytoprotective cellular responses to hypoxia (oxygen deprivation). Specifically, ORP150 participates in protein folding and secretion in the ER and functions to protect cells from hypoxia-induced apoptosis, thereby playing a crucial role in cell survival. ORP150 expression is upregulated in a variety of tumors, such as breast cancer, suggesting an important role in tumorigenesis. The gene encoding ORP150 has two translation initiation sites, resulting in a truncated transcript that lacks an ER signal peptide, but is thought to function as a housekeeping protein in the cytoplasm.

REFERENCES

1. Ikeda, J., et al. 1997. Cloning and expression of cDNA encoding the human 150 kDa oxygen-regulated protein, ORP150. Biochem. Biophys. Res. Commun. 230: 94-99.
2. Ozawa, K., et al. 1999. 150-kDa oxygen-regulated protein (ORP150) suppresses hypoxia-induced apoptotic cell death. J. Biol. Chem. 274: 6397-6404.
3. Bando, Y., et al. 2000. 150-kDa oxygen-regulated protein (ORP150) functions as a novel molecular chaperone in MDCK cells. Am. J. Physiol., Cell Physiol. 278: C1172-C1182.
4. Tamatani, M., et al. 2001. ORP150 protects against hypoxia/ischemia-induced neuronal death. Nat. Med. 7: 317-323.
5. Meunier, L., et al. 2002. A subset of chaperones and folding enzymes form multiprotein complexes in endoplasmic reticulum to bind nascent proteins. Mol. Biol. Cell 13: 4456-4469.

CHROMOSOMAL LOCATION

Genetic locus: HYOU1 (human) mapping to 11q23.3; Hyou1 (mouse) mapping to 9 A5.2.

SOURCE

ORP150 (C-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 117-139 near the N-terminus of ORP150 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-398110 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

ORP150 (C-9) is recommended for detection of ORP150 of mouse, rat and 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for ORP150 siRNA (h): sc-96695, ORP150 siRNA (m): sc-151324, ORP150 shRNA Plasmid (h): sc-96695-SH, ORP150 shRNA Plasmid (m): sc-151324-SH, ORP150 shRNA (h) Lentiviral Particles: sc-96695-V and ORP150 shRNA (m) Lentiviral Particles: sc-151324-V.

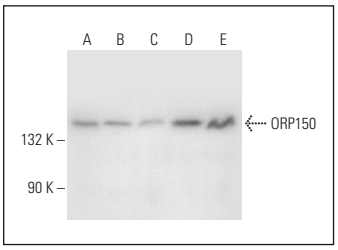
Molecular Weight of ORP150: 150 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, K-562 whole cell lysate: sc-2203 or HeLa whole cell lysate: sc-2200.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



ORP150 (C-9): sc-398110. Western blot analysis of ORP150 expression in HeLa (**A**), MCF7 (**B**), SH-SY5Y (**C**), Hep G2 (**D**) and K-562 (**E**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Pyun, D.H., et al. 2021. Endogenous metabolite, kynurenic acid, attenuates nonalcoholic fatty liver disease via AMPK/autophagy- and AMPK/ORP150-mediated signaling. J. Cell. Physiol. 236: 4902-4912.
2. Jung, T.W., et al. 2022. Abietic acid alleviates endoplasmic reticulum stress and lipid accumulation in human primary hepatocytes through the AMPK/ORP150 signaling. Biochem. Biophys. Res. Commun. 608: 142-148.

STORAGE

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