

FOXRED1 (D-4): sc-377010

BACKGROUND

FOXRED1 (FAD-dependent oxidoreductase domain-containing protein 1), also known as FP634, is a 486 amino acid single-pass membrane protein. Utilizing FAD as a cofactor, FOXRED1 may act as a chaperone protein essential for the function of mitochondrial complex I. Mutations to FOXRED1 may result in mitochondrial complex I deficiency (MT-C1D), which results in a wide range of clinical maladies from lethal neonatal disease to adult onset neurodegenerative disorders. Common phenotypes of MT-C1D include cardiomyopathy, liver disease, Leigh syndrome, Leber hereditary optic neuropathy, and some forms of Parkinson disease. FOXRED1 exists as three alternatively spliced isoforms and is encoded by a gene mapping to human chromosome 11q24.2. With approximately 135 million base pairs and 1,400 genes, chromosome 11 makes up around 4% of human genomic DNA and is considered a gene and disease association dense chromosome.

REFERENCES

- Oh, J.J., et al. 1999. Identification of differentially expressed genes associated with HER-2/neu overexpression in human breast cancer cells. *Nucleic Acids Res.* 27: 4008-4017.
- Martín, M.A., et al. 2005. Leigh syndrome associated with mitochondrial complex I deficiency due to a novel mutation in the NDUFS1 gene. *Arch. Neurol.* 62: 659-661.
- Kruse, S.E., et al. 2008. Mice with mitochondrial complex I deficiency develop a fatal encephalomyopathy. *Cell Metab.* 7: 312-320.
- Distelmaier, F., et al. 2009. Mitochondrial complex I deficiency: from organelle dysfunction to clinical disease. *Brain* 132: 833-842.
- Bailey, S.D., et al. 2010. Variation at the NFATC2 locus increases the risk of thiazolidinedione-induced edema in the Diabetes REduction Assessment with ramipril and rosiglitazone Medication (DREAM) study. *Diabetes Care* 33: 2250-2253.
- Fassone, E., et al. 2010. FOXRED1, encoding an FAD-dependent oxidoreductase complex-I-specific molecular chaperone, is mutated in infantile-onset mitochondrial encephalopathy. *Hum. Mol. Genet.* 19: 4837-4847.

CHROMOSOMAL LOCATION

Genetic locus: FOXRED1 (human) mapping to 11q24.2.

SOURCE

FOXRED1 (D-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 333-367 within an internal region of FOXRED1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ 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-377010 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

FOXRED1 (D-4) is recommended for detection of FOXRED1 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 FOXRED1 siRNA (h): sc-96988, FOXRED1 shRNA Plasmid (h): sc-96988-SH and FOXRED1 shRNA (h) Lentiviral Particles: sc-96988-V.

Molecular Weight of FOXRED1 isoform 1: 54 kDa.

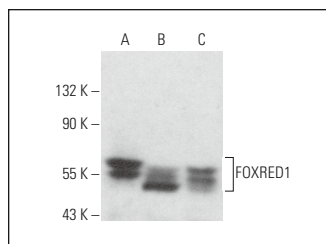
Molecular Weight of FOXRED1 isoform 2: 31 kDa.

Positive Controls: HEL 92.1.7 cell lysate: sc-2270, NCI-H929 whole cell lysate: sc-364786 or T-47D cell lysate: sc-2293.

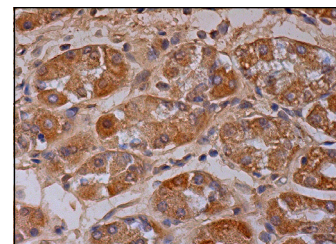
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



FOXRED1 (D-4): sc-377010. Western blot analysis of FOXRED1 expression in T-47D (A), HEL 92.1.7 (B) and NCI-H929 (C) whole cell lysates.



FOXRED1 (D-4): sc-377010. Immunoperoxidase staining of formalin fixed, paraffin-embedded lower stomach tissue showing cytoplasmic staining of glandular cells.

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.