SANTA CRUZ BIOTECHNOLOGY, INC.

FOXRED1 (S-13): sc-138283

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

1. 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.
2. 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.
3. Kruse, S.E., et al. 2008. Mice with mitochondrial complex I deficiency develop a fatal encephalomyopathy. Cell Metab. 7: 312-320.
4. Distelmaier, F., et al. 2009. Mitochondrial complex I deficiency: from organelle dysfunction to clinical disease. Brain 132: 833-842.
5. 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.
6. 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 (S-13) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the C-terminus of FOXRED1 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-138283 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

FOXRED1 (S-13) is recommended for detection of FOXRED1 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:50-1:500), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:25, dilution range 1:25-1:250) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with FOXRED2.

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.

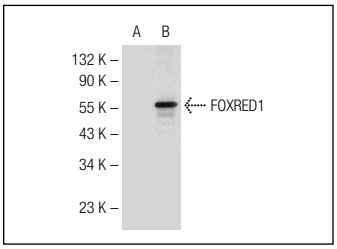
Molecular Weight of FOXRED1 isoforms: 54/31 kDa.

Positive Controls: FOXRED1 (h): 293T Lysate: sc-128647.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



FOXRED1 (S-13): sc-138283. Western blot analysis of FOXRED1 expression in non-transfected: sc-117752 (**A**) and human FOXRED1 transfected: sc-128647 (**B**) 293T whole cell lysates.

STORAGE

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