

# FOXRED1 (H-9): sc-377264

## 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.

## CHROMOSOMAL LOCATION

Genetic locus: FOXRED1 (human) mapping to 11q24.2; Foxred1 (mouse) mapping to 9 A4.

## SOURCE

FOXRED1 (H-9) 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 IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

FOXRED1 (H-9) is available conjugated to agarose (sc-377264 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377264 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377264 PE), fluorescein (sc-377264 FITC), Alexa Fluor® 488 (sc-377264 AF488), Alexa Fluor® 546 (sc-377264 AF546), Alexa Fluor® 594 (sc-377264 AF594) or Alexa Fluor® 647 (sc-377264 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377264 AF680) or Alexa Fluor® 790 (sc-377264 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-377264 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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## APPLICATIONS

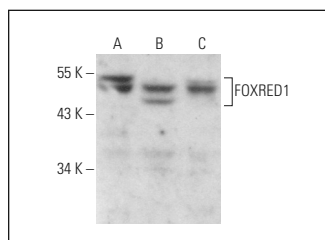
FOXRED1 (H-9) is recommended for detection of FOXRED1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 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 FOXRED1 siRNA (h): sc-96988, FOXRED1 siRNA (m): sc-145230, FOXRED1 shRNA Plasmid (h): sc-96988-SH, FOXRED1 shRNA Plasmid (m): sc-145230-SH, FOXRED1 shRNA (h) Lentiviral Particles: sc-96988-V and FOXRED1 shRNA (m) Lentiviral Particles: sc-145230-V.

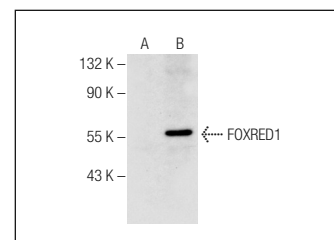
Molecular Weight of FOXRED1 isoforms 1/2: 54/31 kDa.

Positive Controls: FOXRED1 (h): 293T Lysate: sc-128647, T-47D cell lysate: sc-2293 or HEL 92.1.7 cell lysate: sc-2270.

## DATA



FOXRED1 (H-9): sc-377264. Western blot analysis of FOXRED1 expression in T-47D (A), HEL 92.1.7 (B) and NCI-H929 (C) whole cell lysates.



FOXRED1 (H-9): sc-377264. Western blot analysis of FOXRED1 expression in non-transfected: sc-117752 (A) and human FOXRED1 transfected: sc-128647 (B) 293T whole cell lysates.

## SELECT PRODUCT CITATIONS

- García-Ruiz, I., et al. 2013. Pioglitazone leads to an inactivation and disassembly of complex I of the mitochondrial respiratory chain. *BMC Biol.* 11: 88.
- Balderas, E., et al. 2022. Mitochondrial calcium uniporter stabilization preserves energetic homeostasis during complex I impairment. *Nat. Commun.* 13: 2769.

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.