

FLAD1 (H-7): sc-377286

BACKGROUND

FLAD1 (FAD1 flavin adenine dinucleotide synthetase), also known as FAD1, FADS, PP591 or molybdenum cofactor biosynthesis protein-like, is a 587 amino acid protein where its N-terminus belongs to the moaB/mog family and its C-terminus belongs to the PAPS reductase family. Existing as five alternatively spliced isoforms, FLAD1 localizes to the cytoplasm and utilizes magnesium as a cofactor. FLAD1 is a key enzyme in the metabolic pathway that converts riboflavin into the redox cofactor flavin adenine dinucleotide (FAD). It is suggested that the molybdenum cofactor biosynthesis protein-like region of FLAD1 may not be functional. FLAD1 is encoded by a gene located on human chromosome 1, which spans 260 million base pairs, contains over 3,000 genes and comprises nearly 8% of the human genome. Aberrations in chromosome 1 are found in a variety of cancers, including head and neck cancer, malignant melanoma and multiple myeloma.

REFERENCES

1. Wu, M., et al. 1995. Cloning and characterization of FAD1, the structural gene for flavin adenine dinucleotide synthetase of *Saccharomyces cerevisiae*. *Mol. Cell. Biol.* 15: 264-271.
2. Barile, M., et al. 2000. The riboflavin/FAD cycle in rat liver mitochondria. *Eur. J. Biochem.* 267: 4888-4900.
3. Brizio, C., et al. 2006. Over-expression in *Escherichia coli* and characterization of two recombinant isoforms of human FAD synthetase. *Biochem. Biophys. Res. Commun.* 344: 1008-1016.
4. Online Mendelian Inheritance in Man, OMIM™. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 610595. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Chiong, M.A., et al. 2007. Transient multiple acyl-CoA dehydrogenation deficiency in a newborn female caused by maternal riboflavin deficiency. *Mol. Genet. Metab.* 92: 109-114.
6. Galluccio, M., et al. 2007. Over-expression in *Escherichia coli*, purification and characterization of isoform 2 of human FAD synthetase. *Protein Expr. Purif.* 52: 175-181.

CHROMOSOMAL LOCATION

Genetic locus: FLAD1 (human) mapping to 1q21.3; Flad1 (mouse) mapping to 3 F1.

SOURCE

FLAD1 (H-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 289-321 within an internal region of FLAD1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} 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-377286 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

FLAD1 (H-7) is recommended for detection of FLAD1 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).

FLAD1 (H-7) is also recommended for detection of FLAD1 in additional species, including bovine and porcine.

Suitable for use as control antibody for FLAD1 siRNA (h): sc-88309, FLAD1 siRNA (m): sc-145197, FLAD1 shRNA Plasmid (h): sc-88309-SH, FLAD1 shRNA Plasmid (m): sc-145197-SH, FLAD1 shRNA (h) Lentiviral Particles: sc-88309-V and FLAD1 shRNA (m) Lentiviral Particles: sc-145197-V.

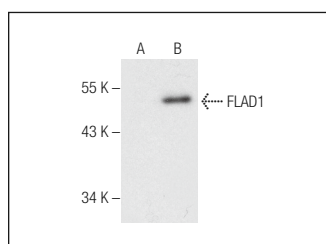
Molecular Weight of FLAD1: 63 kDa.

Positive Controls: MIA PaCa-2 cell lysate: sc-2285, K-562 whole cell lysate: sc-2203 or FLAD1 (h): 293T Lysate: sc-114919.

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



FLAD1 (H-7): sc-377286. Western blot analysis of FLAD1 expression in non-transfected: sc-117752 (A) and human FLAD1 transfected: sc-114919 (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.

RESEARCH USE

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