

# FLAD1 (G-4): sc-376819

## 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

FLAD1 (G-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 157-195 within an internal region of FLAD1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

FLAD1 (G-4) is available conjugated to agarose (sc-376819 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376819 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376819 PE), fluorescein (sc-376819 FITC), Alexa Fluor<sup>®</sup> 488 (sc-376819 AF488), Alexa Fluor<sup>®</sup> 546 (sc-376819 AF546), Alexa Fluor<sup>®</sup> 594 (sc-376819 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-376819 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-376819 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-376819 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-376819 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

Alexa Fluor<sup>®</sup> is a trademark of Molecular Probes, Inc., Oregon, USA

## APPLICATIONS

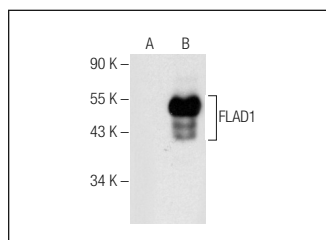
FLAD1 (G-4) is recommended for detection of FLAD1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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 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.

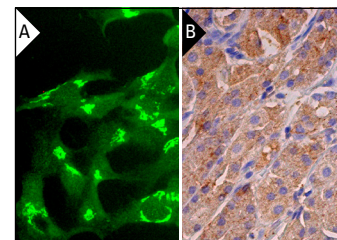
Molecular Weight of FLAD1: 63 kDa.

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

## DATA



FLAD1 (G-4): sc-376819. Western blot analysis of FLAD1 expression in non-transfected: sc-117752 (A) and human FLAD1 transfected: sc-114919 (B) 293T whole cell lysates.



FLAD1 (G-4): sc-376819. Immunofluorescence staining of formalin-fixed Hep G2 cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human upper stomach tissue showing cytoplasmic staining of glandular cells (B).

## SELECT PRODUCT CITATIONS

1. Marceau, C.D., et al. 2016. Genetic dissection of Flaviviridae host factors through genome-scale CRISPR screens. *Nature* 535: 159-163.
2. Genc, A.M., et al. 2020. Elimination of a retinal riboflavin binding protein exacerbates degeneration in a model of cone-rod dystrophy. *Invest. Ophthalmol. Vis. Sci.* 61: 17.

## 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.