## SANTA CRUZ BIOTECHNOLOGY, INC.

# FHL-1 (H-4): sc-374246



## BACKGROUND

The four-and-a-half-LIM domain (FHL) proteins include FHL-1 (SLIM1), FHL-2 (SLIM3), FHL-3 (SLIM2) and FHL-4. The signature "half-domain", a single zinc finger domain located in the N-terminal region, differentiates FHLs from other LIM-only proteins, which have numbers of zinc fingers. Specific combinations of FHL proteins elicit selective activation of both CREB and CREM. Skeletal and cardiac muscle express FHL-1 in high levels as compared to the low level of expression in smooth muscle of the colon, small intestine and prostate. FHL-1 localizes to the cytosol of myoblasts, myotubes, and differentiated myocytes. FHL-2 is also located in cardiac and skeletal muscle, as well as in placenta and ovary tissues. FHL-3 is found in skeletal muscle, but absent in cardiac muscle. FHL-4 is expressed exclusively by the seminiferous epithelium of the testis, which suggests that FHL-4 is involved in spermatogenesis. The genetic loci for FHLs vary considerably despite similiar amino acid sequences among the FHL group.

# REFERENCES

- Morgan, M.J., et al. 1996. Slim defines a novel family of LIM-proteins expressed in skeletal muscle. Biochem. Biophys. Res. Commun. 225: 632-638.
- Chan, K.K., et al. 1998. Molecular cloning and characterization of FHL2, a novel LIM domain protein preferentialy expressed in human heart. Gene 210: 345-350.

## **CHROMOSOMAL LOCATION**

Genetic locus: FHL1 (human) mapping to Xq26.3; Fhl1 (mouse) mapping to X A5.

#### SOURCE

FHL-1 (H-4) is a mouse monoclonal antibody raised against amino acids 1-280 representing full length FHL-1 of human origin.

# PRODUCT

Each vial contains 200  $\mu g\, lg G_1$  kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

FHL-1 (H-4) is available conjugated to agarose (sc-374246 AC), 500  $\mu$ g/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-374246 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374246 PE), fluorescein (sc-374246 FITC), Alexa Fluor<sup>®</sup> 488 (sc-374246 AF488), Alexa Fluor<sup>®</sup> 546 (sc-374246 AF546), Alexa Fluor<sup>®</sup> 594 (sc-374246 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-374246 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-374246 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-374246 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

## **STORAGE**

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

#### **APPLICATIONS**

FHL-1 (H-4) is recommended for detection of FHL-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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); may cross-react with FHL-4 of mouse and rat origin.

Suitable for use as control antibody for FHL-1 siRNA (h): sc-37889, FHL-1 siRNA (m): sc-37890, FHL-1 shRNA Plasmid (h): sc-37889-SH, FHL-1 shRNA Plasmid (m): sc-37890-SH, FHL-1 shRNA (h) Lentiviral Particles: sc-37889-V and FHL-1 shRNA (m) Lentiviral Particles: sc-37890-V.

Molecular Weight of FHL-1A: 32 kDa.

Molecular Weight of FHL-1B: 36 kDa.

Molecular Weight of FHL-1C: 22 kDa.

Positive Controls: C2C12 whole cell lysate: sc-364188, Sol8 cell lysate: sc-2249 or A-10 cell lysate: sc-3806.

## DATA





FHL-1 (H-4): sc-374246. Western blot analysis of FHL-1 expression in Sol8 (A), C2C12 (B), L6 (C) and A-10 (D) whole cell lysates.

FHL-1 (H-4): sc-374246. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic staining of myocytes.

## SELECT PRODUCT CITATIONS

- Li, Y., et al. 2015. Inhibition of FHL1 inhibits cigarette smoke extractinduced proliferation in pulmonary arterial smooth muscle cells. Mol. Med. Rep. 12: 3801-3808.
- Wang, J., et al. 2017. Epigenetic analysis of FHL1 tumor suppressor gene in human liver cancer. Oncol. Lett. 14: 6109-6116.
- Nguyen, M.T., et al. 2020. MiR-96-5p induced by palmitic acid suppresses the myogenic differentiation of C2C12 myoblasts by targeting FHL1. Int. J. Mol. Sci. 21: 9445.
- Teppor, M., et al. 2021. Phosphorylation sites in the hypervariable domain in chikungunya virus nsP3 are crucial for viral replication. J. Virol. 95: e02276-20.

## **RESEARCH USE**

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