

## 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 similar 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 preferentially expressed in human heart. *Gene* 210: 345-350.
- Lee, S.M., et al. 1998. Chromosomal mapping, tissue distribution and cDNA sequence of four-and-a-half LIM domain protein 1 (FHL1). *Gene* 216: 163-170.

### 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 µg IgG<sub>1</sub> 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 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374246 HRP), 200 µg/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 µg/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 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

### 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 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); 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.

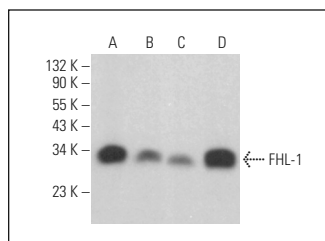
Molecular Weight of FHL-1A: 32 kDa.

Molecular Weight of FHL-1B: 36 kDa.

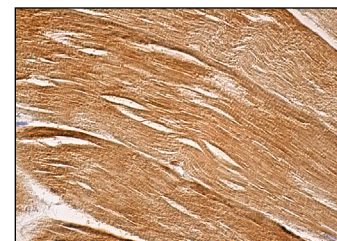
Molecular Weight of FHL-1C: 22 kDa.

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 extract-induced proliferation in pulmonary arterial smooth muscle cells. *Mol. Med. Rep.* 12: 3801-3808.
- Cao, W., et al. 2016. X-linked FHL1 as a novel therapeutic target for head and neck squamous cell carcinoma. *Oncotarget* 7: 14537-14550.
- Wang, J., et al. 2017. Epigenetic analysis of FHL1 tumor suppressor gene in human liver cancer. *Oncol. Lett.* 14: 6109-6116.
- 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.

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