

## FHL-4 (C-19): sc-13417

### 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. The gene for FHL-1 maps to chromosome Xq26 and the gene for FHL-2 maps to chromosome 2q12-q13. The FHL-3 gene maps to chromosome 1p34.

### 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 of a skeletal muscle specific LIM-only protein FHL3 to the distal end of the short arm of human chromosome 1. *Somat. Cell Mol. Genet.* 24: 197-202.
- Lee, S.M., et al. 1998. Chromosomal mapping, tissue distribution and cDNA sequence of four-and-a-half LIM domain protein 1 (FHL-1). *Gene* 216: 163-170.
- Morgan, M.J. et al. 1999. The LIM proteins FHL-1 and FHL-3 are expressed differently in skeletal muscle. *Biochem. Biophys. Res. Commun.* 255: 245-250.
- Greene, W.K., et al. 1999. Genomic structure, tissue expression and chromosomal location of the LIM-only gene, SLIM1. *Gene* 232: 203-207.
- Brown, S., et al. 1999. Characterization of two isoforms of the skeletal muscle LIM protein 1, SLIM1. Localization of SLIM1 at focal adhesions and the isoform slimmer in the nucleus of myoblasts and cytoplasm of myotubes suggest distinct roles in the cytoskeleton and in nuclear-cytoplasmic communication. *J. Biol. Chem.* 274: 27083-27091.
- Morgan, M.J. et al. 1999. The fourth member of the FHL family of LIM proteins is expressed exclusively in the testis. *Biochem. Biophys. Res. Commun.* 255: 251-255.

### CHROMOSOMAL LOCATION

Genetic locus: Fhl4 (mouse) mapping to 10 C1.

### SOURCE

FHL-4 (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of FHL-4 of mouse origin.

### PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-13417 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### APPLICATIONS

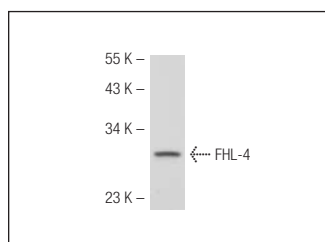
FHL-4 (C-19) is recommended for detection of FHL-4 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1–2 µg per 100–500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for FHL-4 siRNA (m): sc-35370, FHL-4 shRNA Plasmid (m): sc-35370-SH and FHL-4 shRNA (m) Lentiviral Particles: sc-35370-V.

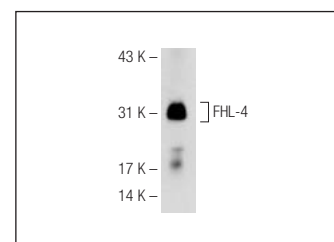
Molecular Weight of FHL-4: 32 kDa.

Positive Controls: mouse testis extract: sc-2405 or RAW 264.7 whole cell lysate: sc-2211.

### DATA



FHL-4 (C-19): sc-13417. Western blot analysis of FHL-4 expression in RAW 264.7 whole cell lysate.



FHL-4 (C-19): sc-13417. Western blot analysis of FHL-4 expression in mouse testis tissue extract.

### 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) or our catalog for detailed protocols and support products.