SANTA CRUZ BIOTECHNOLOGY, INC.

FHL-3 (B-2): sc-166917

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

1. Morgan, M.J. and Madgwick, A.J. 1996. SLIM defines a novel family of LIM-proteins expressed in skeletal muscle. Biochem. Biophys. Res. Commun. 225: 632-638.
2. Chan, K.K., et al. 1998. Molecular cloning and characterization of FHL-2, a novel LIM domain protein preferentialy expressed in human heart. Gene 210: 345-350.

CHROMOSOMAL LOCATION

Genetic locus: FHL3 (human) mapping to 1p34.3; Fhl3 (mouse) mapping to 4 D2.2.

SOURCE

FHL-3 (B-2) is a mouse monoclonal antibody raised against amino acids 161-280 mapping at the C-terminus of FHL-3 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

FHL-3 (B-2) is available conjugated to agarose (sc-166917 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166917 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166917 PE), fluorescein (sc-166917 FITC), Alexa Fluor® 488 (sc-166917 AF488), Alexa Fluor® 546 (sc-166917 AF546), Alexa Fluor® 594 (sc-166917 AF594) or Alexa Fluor® 647 (sc-166917 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166917 AF680) or Alexa Fluor® 790 (sc-166917 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-3 (B-2) is recommended for detection of FHL-3 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).

Suitable for use as control antibody for FHL-3 siRNA (h): sc-37893, FHL-3 siRNA (m): sc-37894, FHL-3 shRNA Plasmid (h): sc-37893-SH, FHL-3 shRNA Plasmid (m): sc-37894-SH, FHL-3 shRNA (h) Lentiviral Particles: sc-37893-V and FHL-3 shRNA (m) Lentiviral Particles: sc-37894-V.

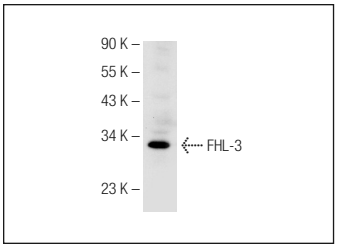
Molecular Weight of FHL-3: 31 kDa.

Positive Controls: L6 whole cell lysate: sc-364196.

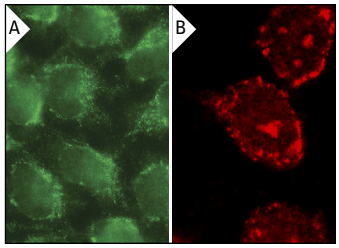
RECOMMENDED SUPPORT REAGENTS

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



FHL-3 (B-2): sc-166917. Western blot analysis of FHL-3 expression in L6 whole cell lysate.



FHL-3 (B-2): sc-166917. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization (**A**,**B**).

SELECT PRODUCT CITATIONS

1. Zhang, Y., et al. 2016. FHL-3 differentially regulates the expression of MyHC isoforms through interactions with MyoD and pCREB. Cell. Signal. 28: 60-73.
2. Zhu, M., et al. 2017. NDRG4 promotes myogenesis via Akt/CREB activation. Oncotarget 8: 101720-101734.
3. Bai, W., et al. 2023. FHL3 promotes the formation of fast glycolytic muscle fibers by interacting with YY1 and muscle glycolytic metabolism. Cell. Mol. Life Sci. 80: 27.

RESEARCH USE

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