

LLH3 (A-3): sc-515936

BACKGROUND

Lysyl hydroxylases (LLHs) 1-3 are hydroxylsines that function as attachment sites for carbohydrates. In collagen, the LLHs form hydroxylsine residues in -Xaa-Lys-Gly- sequences and are crucial for collagen crosslink stability. They form homodimers that localize to the endoplasmic reticulum. LLH1 is strongly expressed in liver, heart, lung, skeletal muscle and kidney tissue. LLH2 is highly expressed in heart, lung, kidney, eye, ovary and placenta, whereas LLH3 is expressed mainly in heart, lung, liver and testis. LLH3 is a 738 amino acid, multifunctional enzyme with lysyl hydroxylase, hydroxyllysyl galactosyltransferase and galactosylhydroxyllysyl glucosyltransferase activities. LLH3 is necessary for the formation of the basement membrane and its gene expression is tightly regulated in adult tissues. Defects in the LLH3 gene commonly lead to heritable disorders of connective tissue and loss of LLH3 results in embryonic lethality.

REFERENCES

1. Heikkinen, J., et al. 2000. Lysyl hydroxylase 3 is a multifunctional protein possessing collagen glucosyltransferase activity. *J. Biol. Chem.* 275: 36158-36163.
2. Wang, C., et al. 2002. Identification of amino acids important for the catalytic activity of the colla glucosyltransferase associated with the multifunctional lysyl hydroxylase 3 (LH3). *J. Biol. Chem.* 277: 18568-18573.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 603066. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Rautavuoma, K., et al. 2004. Premature aggregation of type IV collagen and early lethal 3 null mice. *Proc. Natl. Acad. Sci. USA* 101: 14120-14125.
5. Risteli, M., et al. 2004. Characterization of collagenous peptides bound to lysyl hydroxylase isoforms. *J. Biol. Chem.* 279: 37535-37543.
6. Takashi, M., et al. 2005. Differential gene expression of collagen-binding small leucine-rich proteoglycans and lysyl hydroxylases, during mineralization by MC3T3-E1 cells cultured on titanium implant material. *Eur. J. Oral Sci.* 113: 225-231.
7. Zuurmond, A.M., et al. 2005. Minoxidil exerts different inhibitory effects on gene expression of lysyl hydroxylase 1, 2, and 3: implications for collagen cross-linking and treatment of fibrosis. *Matrix Biol.* 24: 261-270.
8. Ruotsalainen, H., et al. 2006. Glycosylation catalyzed by lysyl hydroxylase 3 is essential for basement membranes. *J. Cell Sci.* 119: 625-635.

CHROMOSOMAL LOCATION

Genetic locus: PLOD3 (human) mapping to 7q22.1; Plod3 (mouse) mapping to 5 G2.

SOURCE

LLH3 (A-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 342-367 within an internal region of LLH3 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

LLH3 (A-3) is recommended for detection of LLH3 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 LLH3 siRNA (h): sc-60952, LLH3 siRNA (m): sc-60953, LLH3 shRNA Plasmid (h): sc-60952-SH, LLH3 shRNA Plasmid (m): sc-60953-SH, LLH3 shRNA (h) Lentiviral Particles: sc-60952-V and LLH3 shRNA (m) Lentiviral Particles: sc-60953-V.

Molecular Weight of LLH3: 80-85 kDa.

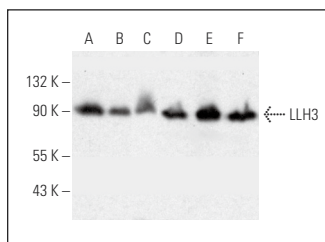
Positive Controls: HeLa whole cell lysate: sc-2200, JAR cell lysate: sc-2276 or A549 cell lysate: sc-2413.

RECOMMENDED SUPPORT REAGENTS

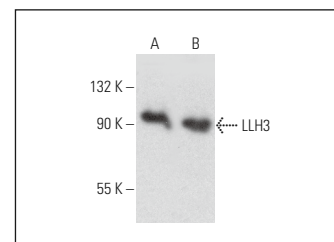
To ensure optimal results, the following support reagents are recommended:

- 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



LLH3 (A-3): sc-515936. Western blot analysis of LLH3 expression in HeLa (A), JAR (B), A549 (C), CCD-1064Sk (D), Saos-2 (E) and MDA-MB-231 (F) whole cell lysates.



LLH3 (A-3): sc-515936. Western blot analysis of LLH3 expression in RAW 264.7 (A) and RIN-m5F (B) whole cell lysates.

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.