

## LLH3 (A-10): sc-166007

### BACKGROUND

Lysyl hydroxylases (LLHs) 1-3 are hydroxylysines that function as attachment sites for carbohydrates. In collagen, the LLHs form hydroxylysine 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, hydroxylysyl galactosyltransferase and galactosylhydroxylysyl 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 collagen 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.

### CHROMOSOMAL LOCATION

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

### SOURCE

LLH3 (A-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 509-547 within an internal region of LLH3 of human origin.

### PRODUCT

Each vial contains 200 µg IgG<sub>3</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-166007 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

### APPLICATIONS

LLH3 (A-10) 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.

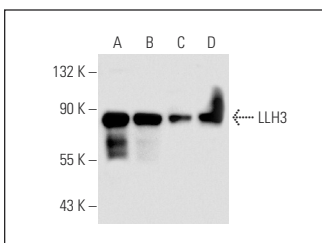
Molecular Weight of LLH3: 80-85 kDa.

Positive Controls: Saos-2 cell lysate: sc-2235, CCD-1064Sk cell lysate: sc-2263 or HeLa whole cell lysate: sc-2200.

### 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-10): sc-166007. Western blot analysis of LLH3 expression in Saos-2 (A), HeLa (B), CCD-1064Sk (C) and NTERA-2 cl.D1 (D) 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.

### PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.