

## LLH3 (D-20): sc-50070

### BACKGROUND

Lysyl hydroxylases (LLHs) 1-3 are hydroxyllysines that function as attachment sites for carbohydrates. In collagen, the LLHs form hydroxyllysine 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

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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<sup>™</sup>. 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: 625-35.

### CHROMOSOMAL LOCATION

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

### SOURCE

LLH3 (D-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of LLH3 of human origin.

### RESEARCH USE

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

### 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-50070 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### APPLICATIONS

LLH3 (D-20) is recommended for detection of LLH3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

LLH3 (D-20) is also recommended for detection of LLH3 in additional species, including equine, canine and bovine.

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, JAR cell lysate: sc-2276 or A549 cell lysate: sc-2413.

### RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker<sup>™</sup> compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz<sup>™</sup> Mounting Medium: sc-24941.

### STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

### PROTOCOLS

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