LLH1 (B-5): sc-271640

SANTA CRUZ®
BIOTECHNOLOGY

The Power to Question

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 cross-link 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. LLH1 preferentially hydroxylates triple helical lysine residues at the cross-link positions. Decreased levels of LLH1 expression may lead to Ehlers-Danlos syndrome type VI in skin fibroblasts. This syndrome refers to a heterogeneous group of inherited connective tissue disorders that are characterized by joint hypermobility, skin fragility and hyperextensibility.

CHROMOSOMAL LOCATION

Genetic locus: PLOD1 (human) mapping to 1p36.22; Plod1 (mouse) mapping to 4 E2.

SOURCE

LLH1 (B-5) is a mouse monoclonal antibody raised against amino acids 298-363 mapping within an internal region of LLH1 of human origin.

PRODUCT

Each vial contains 200 µg IgG$_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

LLH1 (B-5) is available conjugated to agarose (sc-271640 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271640 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271640 PE), fluorescein (sc-271640 FITC), Alexa Fluor® 488 (sc-271640 AF488), Alexa Fluor® 546 (sc-271640 AF546), Alexa Fluor® 594 (sc-271640 AF594) or Alexa Fluor® 647 (sc-271640 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271640 AF680) or Alexa Fluor® 790 (sc-271640 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

LLH1 (B-5) is recommended for detection of LLH1 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), immunohistochemistry (including paraffin-embedded sections) (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 LLH1 siRNA (h): sc-60948, LLH1 siRNA (m): sc-60949, LLH1 shRNA Plasmid (h): sc-60948-SH, LLH1 shRNA Plasmid (m): sc-60949-SH, LLH1 shRNA (h) Lentiviral Particles: sc-60948-V and LLH1 shRNA (m) Lentiviral Particles: sc-60949-V.

Molecular Weight of LLH1: 85 kDa.

Positive Controls: HEK293 whole cell lysate: sc-45136, NIH/3T3 whole cell lysate: sc-2210 or A-10 cell lysate: sc-3806.

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA
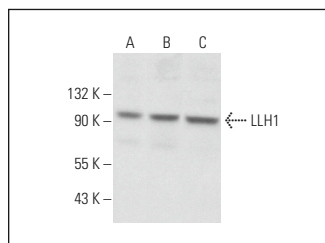
LLH1 (B-5): sc-271640. Western blot analysis of LLH1 expression in HEK293 (**A**), NIH/3T3 (**B**) and A-10 (**C**) whole cell lysates.
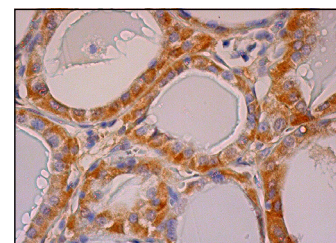
LLH1 (B-5): sc-271640. Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Steplewski, A., et al. 2016. Auxiliary proteins that facilitate formation of collagen-rich deposits in the posterior knee capsule in a rabbit-based joint contracture model. J. Orthop. Res. 34: 489-501.

2. Terajima, M., et al. 2019. Role of glycosyltransferase 25 domain 1 in type I collagen glycosylation and molecular phenotypes. Biochemistry 58: 5040-5051.

3. Shire, K., et al. 2021. Characterization of a cancer-associated Epstein-Barr virus EBNA1 variant reveals a novel interaction with PLOD1 and PLOD3. Virology 562: 103-109.

4. Isono, T., et al. 2022. Transcriptome analysis of a dog model of congestive heart failure shows that collagen-related 2-oxoglutarate-dependent dioxygenases contribute to heart failure. Sci. Rep. 12: 22569.

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 for detailed protocols and support products.