SANTA CRUZ BIOTECHNOLOGY, INC.

HRT3 (C-18): sc-16449

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The Power to Question

BACKGROUND

The LIN-12/Notch family of transmembrane receptors plays a central role in development by regulating cell fate and establishing boundaries of gene expression. Notch signaling activates the hairy/enhancer of split [H/E(spl)] genes, which encode basic helix-loop-helix (bHLH) transcriptional repressors that are critical for directing embryonic patterning and development. The Hairy-related transcription factors (HRTs) comprise a subclass of bHLH proteins that exhibit structural similarity with the H/E(spl) proteins and include HRT1, HRT2 and HRT3. The HRT family (also designated Hesr, Hey, CHF and Gridlock) contain a bHLH domain, an orange domain and a novel YRPW domain, which is absent in HRT3. The Hairy-related genes map to human chromosomes 8q21, 6q21 and 1p34.3 for HRT1, HRT2 and HRT3, respectively, and are downstream targets for Notch signaling. HRT1 is expressed in the somitic mesoderm, central nervous system, kidney, heart, nasal epithelium and limb buds in murine embryos as well as in adult tissues. It has altered expression in many breast, lung and kidney tumors. Like HRT1, HRT2 and HRT3 are also expressed in developing somites, heart and nervous system.

REFERENCES

1. Simpson, P. 1994. The Notch receptors. Austin, TX: R.G. Landes Company.
2. Kokubo, H., Lun, Y. and Johnson, R.L. 1999. Identification and expression of a novel family of bHLH cDNAs related to *Drosophila* hairy and Enhancer of split. Biochem. Biophys. Res. Commun. 260: 459-465.
3. Nakagawa, O., Nakagawa, M., Richardson, J.A., Olson, E.N. and Srivastava, D. 1999. HRT1, HRT2, and HRT3: a new subclass of bHLH transcription factors marking specific cardiac, somitic, and pharyngeal arch segments. Dev. Biol. 216: 72-84.
4. Leimeister, C., Externbrink, A., Klamt, B. and Gessler, M. 1999. Hey genes: a novel subfamily of hairy and enhancer of split related genes specifically expressed during mouse embryogenesis. Mech. Dev. 85: 173-177.
5. Leimeister, C., Schumacher, N., Steidl, C. and Gessler, M. 2000. Analysis of HeyL expression in wild-type and Notch pathway mutant mouse embryos. Mech. Dev. 98: 175-178.
6. Nakagawa, O., McFadden, D.G., Nakagawa, M., Yanagisawa, H., Hu, T., Srivastava, D. and Olson, E.N. 2000. Members of the HRT family of basic helix-loop-helix proteins act as transcriptional repressors downstream of Notch signaling. Proc. Natl. Acad. Sci. USA 97: 13655-13660.

CHROMOSOMAL LOCATION

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

SOURCE

HRT3 (C-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of HRT3 of human origin.

STORAGE

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

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-16449 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-16449 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

HRT3 (C-18) is recommended for detection of HRT3 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).

HRT3 (C-18) is also recommended for detection of HRT3 in additional species, including bovine.

Suitable for use as control antibody for HRT3 siRNA (h): sc-37918, HRT3 siRNA (m): sc-37919, HRT3 shRNA Plasmid (h): sc-37918-SH, HRT3 shRNA Plasmid (m): sc-37919-SH, HRT3 shRNA (h) Lentiviral Particles: sc-37918-V and HRT3 shRNA (m) Lentiviral Particles: sc-37919-V.

HRT3 (C-18) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of HRT3: 41 kDa.

Positive Controls: C3H/10T1/2 cell lysate: sc-3801.

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™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ 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™ Mounting Medium: sc-24941.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.