

# HRT3 (3555C3a): sc-81294

## 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 1p34.2 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

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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.
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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.
7. Steidl, C., Leimeister, C., Klamt, B., Maier, M., Nanda, I., Dixon, M., Clarke, R., Schmid, M. and Gessler, M. 2000. Characterization of the human and mouse HEY1, HEY2, and HEYL genes: cloning, mapping, and mutation screening of a new bHLH gene family. *Genomics* 66: 195-203.
8. Henderson, A.M., Wang, S.J., Taylor, A.C., Aitkenhead, M. and Hughes, C.C. 2001. The basic helix-loop-helix transcription factor HESR1 regulates endothelial cell tube formation. *J. Biol. Chem.* 276: 6169-6176.

## PROTOCOLS

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

## CHROMOSOMAL LOCATION

Genetic locus: HEYL (human) mapping to 1p34.2.

## SOURCE

HRT3 (3555C3a) is a mouse monoclonal antibody raised against a recombinant protein corresponding to the C-terminal region of HRT3 of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 1.0% stabilizer protein.

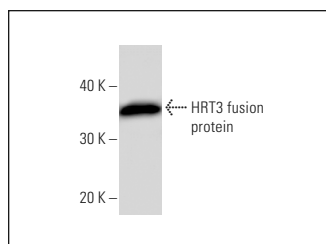
## APPLICATIONS

HRT3 (3555C3a) is recommended for detection of HRT3 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

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

Molecular Weight of HRT3: 41 kDa.

## DATA



HRT3 (3555C3a): sc-81294. Western Blot analysis of human recombinant HRT3 fusion protein.

## SELECT PRODUCT CITATIONS

1. Tsai, Y.C., Cheng, K.H., Jiang, S.S., Hawse, J.R., Chuang, S.E., Chen, S.L., Huang, T.S. and Ch'ang, H.J. 2023. Krüppel-like factor 10 modulates stem cell phenotypes of pancreatic adenocarcinoma by transcriptionally regulating notch receptors. *J. Biomed. Sci.* 30: 39.

## STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

## RESEARCH USE

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