

# HRT2 (2B10): sc-293301

## 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 (HES) 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 HES 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 8q21.13, 6q22.31 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. Leimeister, C., et al. 1999. Hey genes: a novel subfamily of Hairy- and Enhancer of split related genes specifically expressed during mouse embryogenesis. *Mech. Dev.* 85: 173-177.
3. Nakagawa, O., et al. 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. Kokubo, H., et al. 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.
5. Nakagawa, O., et al. 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.
6. Steidl, C., et al. 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.
7. Leimeister, C., et al. 2000. Analysis of HeyL expression in wild-type and Notch pathway mutant mouse embryos. *Mech. Dev.* 98: 175-178.
8. Henderson, A.M., et al. 2001. The basic helix-loop-helix transcription factor HESR1 regulates endothelial cell tube formation. *J. Biol. Chem.* 276: 6169-6176.

## CHROMOSOMAL LOCATION

Genetic locus: HEY2 (human) mapping to 6q22.31.

## SOURCE

HRT2 (2B10) is a mouse monoclonal antibody raised against amino acids 1-110 of HRT2 of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

HRT2 (2B10) is recommended for detection of HRT2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

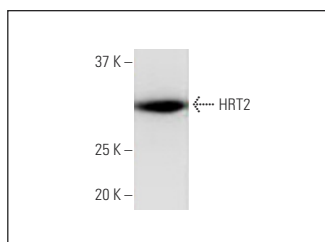
Suitable for use as control antibody for HRT2 siRNA (h): sc-37916, HRT2 shRNA Plasmid (h): sc-37916-SH and HRT2 shRNA (h) Lentiviral Particles: sc-37916-V.

Positive Controls: human pancreas extract: sc-363770.

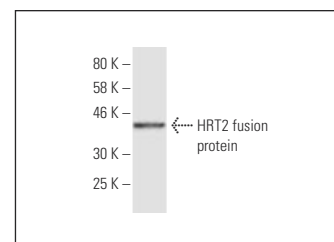
## RECOMMENDED SUPPORT REAGENTS

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).

## DATA



HRT2 (2B10): sc-293301. Western blot analysis of HRT2 expression in human pancreas tissue extract.



HRT2 (2B10): sc-293301. Western blot analysis of human recombinant HRT2 fusion protein.

## 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.