SANTA CRUZ BIOTECHNOLOGY, INC.

HRT1 (NB-A7): sc-134362

SANTA CRUZ BIOTECHNOLOGY

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 (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 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., 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.
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.

CHROMOSOMAL LOCATION

Genetic locus: HEY1 (human) mapping to 8q21.13.

SOURCE

HRT1 (NB-A7) is a mouse monoclonal antibody raised against recombinant HRT1 protein of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

HRT1 (NB-A7) is recommended for detection of HRT1 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 HRT1 siRNA (h): sc-37914, HRT1 shRNA Plasmid (h): sc-37914-SH and HRT1 shRNA (h) Lentiviral Particles: sc-37914-V.

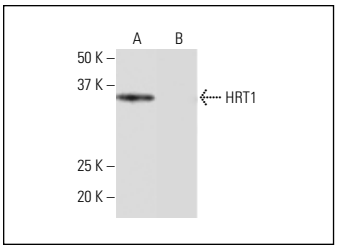
Molecular Weight of HRT1: 33 kDa.

Positive Controls: human HRT1 transfected 293T whole cell lysate.

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



HRT1 (NB-A7): sc-134362. Western blot analysis of HRT1 expression in human HRT1 transfected (**A**) and non-transfected (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Wang, L., et al. 2017. Delta/Notch-like epidermal growth factor-related receptor (DNER) orchestrates stemness and cancer progression in prostate cancer. Am. J. Transl. Res. 9: 5031-5039.
2. Yu, H., et al. 2017. LDB2 inhibits proliferation and migration in liver cancer cells by abrogating HEY1 expression. Oncotarget 8: 94440-94449.
3. Huang, G., et al. 2018. lncAKHE enhances cell growth and migration in hepatocellular carcinoma via activation of Notch2 signaling. Cell Death Dis. 9: 487.
4. Xiu, D.H., et al. 2019. Long non-coding RNA LINC00968 attenuates drug resistance of breast cancer cells through inhibiting the Wnt2/β-catenin signaling pathway by regulating WNT2. J. Exp. Clin. Cancer Res. 38: 94.
5. Wang, H., et al. 2020. Over-expression of Cdx2 alleviates breast cancer by up-regulating microRNA let-7b and inhibiting COL11A1 expression. Cancer Cell Int. 20: 13.
6. Wang, G., et al. 2021. LncRNA MAGI2-AS3 inhibits tumor progression and angiogenesis by regulating ACY1 via interacting with transcription factor HEY1 in clear cell renal cell carcinoma. Cancer Gene Ther. E-published.

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.