SANTA CRUZ BIOTECHNOLOGY, INC.

HR (D-4): sc-398176

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

HR (protein Hairless) is a 1,189 amino acid protein which is expressed as two isoforms produced by alternative splicing. The two isoforms are expressed in a variety of tissues in varying concentrations. Isoform 1 is more abundant than isoform 2 and is expressed at low levels in kidneys and testis, while isoform 2 is expressed abundantly in skin. Both isoforms are also present together in many tissues and are expressed strongly in small intestine and brain and weakly in trachea. HR is thought to be a transcription factor involved in hair growth. Hair growth occurs in three phases known as anagen, catagen and telogen, which are phases where growth, regression and rest, respectively, are taking place. By unknown mechanisms, HR is thought to regulate one of the hair growth phases and to work with vitamin D receptor (VDR) to regulate hair follicle cycling. Defects in HR may cause two serious ailments, known as alopecia universalis congenita (ALUNC) and atrichia with papular lesions (APL), which is also referred to as congenital atrichia. Both are autosomally recessive impairments. ALUNC is a rare condition in which hair follicles are produced without hair, while APL is a serious disease in which papillary lesions may cover the body and little to no hair is grown.

REFERENCES

1. Potter, G.B., et al. 2001. The Hairless gene mutated in congenital hair loss disorders encodes a novel nuclear receptor corepressor. Genes Dev. 15: 2687-2701.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 602302. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Djabali, K. and Christiano, A.M. 2004. Hairless contains a novel nuclear matrix targeting signal and associates with histone deacetylase 3 in nuclear speckles. Differentiation 72: 410-418.
4. Bergman, R., et al. 2005. The alopecias associated with vitamin D-dependent rickets type IIA and with Hairless gene mutations: a comparative clinical, histologic, and immunohistochemical study. Arch. Dermatol. 141: 343-351.
5. Skorija, K., et al. 2005. Ligand-independent actions of the vitamin D receptor maintain hair follicle homeostasis. Mol. Endocrinol. 19: 855-862.
6. Zhang, J.T., et al. 2005. Molecular cloning of full-long cDNA sequences encoding Hairless gene in the Kunming mouse. Yi Chuan 27: 908-914.
7. Bikle, D.D., et al. 2006. Development and progression of alopecia in the vitamin D receptor null mouse. J. Cell. Physiol. 207: 340-353.
8. Brancaz-Bouvier, M.V., et al. 2008. The "bald Mill Hill" mutation in the mouse is associated with an abnormal, mislocalized HR bmh protein. J. Invest. Dermatol. 128: 311-321.
9. Engelhard, A., et al. 2008. Ligand-independent regulation of the Hairless promoter by vitamin D receptor. Photochem. Photobiol. 84: 515-521.

STORAGE

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

CHROMOSOMAL LOCATION

Genetic locus: HR (human) mapping to 8p21.3.

SOURCE

HR (D-4) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of HR 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.

APPLICATIONS

HR (D-4) is recommended for detection of HR of 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for HR siRNA (h): sc-77654, HR shRNA Plasmid (h): sc-77654-SH and HR shRNA (h) Lentiviral Particles: sc-77654-V.

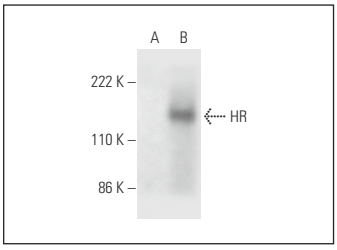
Molecular Weight of HR: 130 kDa.

Positive Controls: HR (h): 293T Lysate: sc-116984.

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.

DATA



HR (D-4): sc-398176. Western blot analysis of HR expression in non-transfected: sc-117752 (**A**) and human HR transfected: sc-116984 (**B**) 293T whole cell lysates.

RESEARCH USE

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