

# BHLHA9 (G-18): sc-241914

## BACKGROUND

BHLHA9 (class A basic helix-loop-helix protein 9), also known as BHLHF42 (class F basic helix-loop-helix factor 42), is a 235 amino acid nuclear protein. BHLHA9 contains one basic helix-loop-helix domain and may act as a transcription factor. The gene that encodes BHLHA9 maps to human chromosome 17, which makes up over 2.5% of the human genome with about 81 million bases encoding over 1,200 genes. Two key tumor suppressor genes are associated with chromosome 17, namely, p53 and BRCA1. Tumor suppressor p53 is necessary for maintenance of cellular genetic integrity by moderating cell fate through DNA repair versus cell death. Malfunction or loss of p53 expression is associated with malignant cell growth and Li-Fraumeni syndrome. Like p53, BRCA1 is directly involved in DNA repair, though specifically it is recognized as a genetic determinant of early onset breast cancer and predisposition to cancers of the ovary, colon, prostate gland and fallopian tubes. Chromosome 17 is also linked to neurofibromatosis, a condition characterized by neural and epidermal lesions, and dysregulated Schwann cell growth. Alexander disease, Birt-Hogg-Dube syndrome and Canavan disease are also associated with chromosome 17.

## REFERENCES

1. McLellan, A.S., Langlands, K. and Kealey, T. 2002. Exhaustive identification of human class II basic helix-loop-helix proteins by virtual library screening. *Mech. Dev.* 119: S285-S291.
2. Welsch, M.J., Kronic, A. and Medenica, M.M. 2005. Birt-Hogg-Dube Syndrome. *Int. J. Dermatol.* 44: 668-673.
3. Nusbaum, R., Vogel, K.J. and Ready, K. 2006-2007. Susceptibility to breast cancer: hereditary syndromes and low penetrance genes. *Breast Dis.* 27: 21-50.
4. Al-Dirbashi, O.Y., Rashed, M.S., Al-Qahtani, K., Al-Mokhadab, M.A., Kurdi, W. and Al-Sayed M.A. 2007. Quantification of N-acetylaspartic acid in urine by LC-MS/MS for the diagnosis of Canavan disease. *J. Inherit. Metab. Dis.* 30: 612.
5. Dann, R.B., Kelley, J.L. and Zorn, K.K. 2007. Strategies for ovarian cancer prevention. *Obstet. Gynecol. Clin. North Am.* 34: 667-686.
6. Farrell, C.J. and Plotkin, S.R. 2007. Genetic causes of brain tumors: neurofibromatosis, tuberous sclerosis, von Hippel-Lindau, and other syndromes. *Neurol. Clin.* 25: 925-946.
7. Suela, J., Largo, C., Ferreira, B., Alvarez, S., Robledo, M., González-Neira, A., Calasanz, M.J. and Cigudosa, J.C. 2007. Neurofibromatosis 1, and Not TP53, seems to be the main target of chromosome 17 deletions in *de novo* acute myeloid leukemia. *J. Clin. Oncol.* 25: 1151-1152.
8. Tai, Y.C., Domchek, S., Parmigiani, G. and Chen, S. 2007. Breast cancer risk among male BRCA1 and BRCA2 mutation carriers. *J. Natl. Cancer Inst.* 99: 1811-1814.
9. Stevens, J.D., Roalson, E.H. and Skinner, M.K. 2008. Phylogenetic and expression analysis of the basic helix-loop-helix transcription factor gene family: genomic approach to cellular differentiation. *Differentiation* 76: 1006-1022.

## CHROMOSOMAL LOCATION

Genetic locus: BHLHA9 (human) mapping to 17p13.3.

## SOURCE

BHLHA9 (G-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of BHLHA9 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-241914 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-241914 X, 200 µg/0.1 ml.

## APPLICATIONS

BHLHA9 (G-18) is recommended for detection of BHLHA9 of 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).

Suitable for use as control antibody for BHLHA9 siRNA (h): sc-93795, BHLHA9 shRNA Plasmid (h): sc-93795-SH and BHLHA9 shRNA (h) Lentiviral Particles: sc-93795-V.

BHLHA9 (G-18) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of BHLHA9: 24 kDa.

## 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.

## 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) or our catalog for detailed protocols and support products.