SANTA CRUZ BIOTECHNOLOGY, INC.

Bcr (G6): sc-104

BACKGROUND

The Bcr gene, mapping on chromosome 22, was initially identified on the basis of its fusion with the c-Abl proto-oncogene on chromosome 9 resulting in the generation of the Philadelphia chromosome in 90-95% of patients with chronic myelogenous leukemia (CML). The Bcr gene encodes for the break-point cluster region protein (Bcr). A consequence of this translocation is the generation of a Bcr/c-Abl mRNA encoding an activated c-Abl protein kinase. The Bcr gene has been shown to encode a GTPase-activating protein (GAP) specific for the Ras-related GTP-binding protein, Rac 1 p21. While it has been speculated that the Bcr protein may also stimulate Rac 2 p21 GTPase activity, it has no effect on Ras p21 or Rho p21 GTPases. It is of interest that the GAP domain of Bcr maps outside of the region that remains on chromosome 22 (philadelphia chromosome) in CML.

CHROMOSOMAL LOCATION

Genetic locus: BCR (human) mapping to 22q11.23, ABL1 (human) mapping to 9q34.12; Bcr (mouse) mapping to 10 B5.3, Abl1 (mouse) mapping to 2 B.

SOURCE

Bcr (G6) is a mouse monoclonal antibody raised against a synthetic peptide from the amino acid sequence of the Bcr gene product 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.

Bcr (G6) is available conjugated to agarose (sc-104 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-104 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-104 PE), fluorescein (sc-104 FITC), Alexa Fluor® 488 (sc-104 AF488), Alexa Fluor® 546 (sc-104 AF546), Alexa Fluor® 594 (sc-104 AF594) or Alexa Fluor® 647 (sc-104 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-104 AF680) or Alexa Fluor® 790 (sc-104 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Bcr (G6) is recommended for detection of Bcr/Abl p190 and Bcr/Abl p210 fusion proteins of mouse, rat and 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of Bcr: 160 kDa.

Molecular Weight of Bcr in Philadelphia-positive leukemia: 130 kDa.

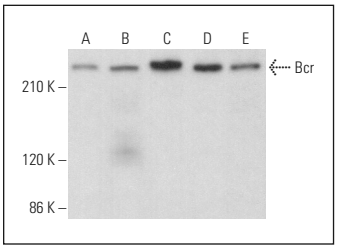
Molecular Weight of Bcr/Abl fusion proteins: 190/210 kDa.

Positive Controls: PC-12 cell lysate: sc-2250, HeLa whole cell lysate: sc-2200 or Y79 cell lysate: sc-2240.

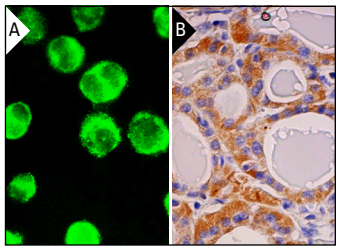
STORAGE

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

DATA



Bcr (G6): sc-104. Western blot analysis of Bcr expression in Jurkat (**A**), HeLa (**B**), PC-12 (**C**), Y79 (**D**) and MEG-01 (**E**) whole cell lysates.



Bcr (G6): sc-104. Immunofluorescence staining of methanol-fixed K-562 cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Chai, S.K., et al. 1997. Constitutive activation of JAKs and Stats in Bcr-Abl-expressing cell lines and peripheral blood cells derived from leukemic patients. J. Immunol. 159: 4720-4728.
2. Harnois, T., et al. 2003. Differential interaction and activation of Rho family GTPases by $p210^{Bcr\text{-}Abl}$ and $p190^{Bcr\text{-}Abl}$. Oncogene 22: 6445-6454.
3. Malmberg, E.K., et al. 2004. Bcr (breakpoint cluster region) protein binds to PDZ-domains of scaffold protein PDZK1 and vesicle coat protein Mint3. J. Cell Sci. 117: 5535-5541.
4. Gutiérrez-Berzal, J., et al. 2006. Characterization of p87C3G, a novel, truncated C3G isoform that is overexpressed in chronic myeloid leukemia and interacts with Bcr-Abl. Exp. Cell Res. 312: 938-948.
5. Kawano, T., et al. 2007. MUC1 oncoprotein regulates Bcr-Abl stability and pathogenesis in chronic myelogenous leukemia cells. Cancer Res. 67: 11576-11584.
6. Suzuki, K., et al. 2012. IKAROS isoform 6 enhances Bcr-Abl1-mediated proliferation of human $CD34^+$ hematopoietic cells on stromal cells. Int. J. Oncol. 40: 53-62.
7. Elzinga, B.M., et al. 2013. Induction of autophagy by Imatinib sequesters Bcr-Abl in autophagosomes and down-regulates Bcr-Abl protein. Am. J. Hematol. 88: 455-462.
8. Shin, J.M., et al. 2016. Suppression of c-Myc induces apoptosis via an AMPK/mTOR-dependent pathway by 4-O-methyl-ascochlorin in leukemia cells. Apoptosis 21: 657-668.
9. Liu, H., et al. 2018. The nonreceptor tyrosine kinase c-Abl phosphorylates RUNX1 and regulates RUNX1-mediated megakaryocyte maturation. Biochim. Biophys. Acta Mol. Cell Res. 1865: 1060-1072.

RESEARCH USE

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