SANTA CRUZ BIOTECHNOLOGY, INC.

Bcr siRNA (m): sc-29796

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 breakpoint cluster region (Bcr) protein. 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.

REFERENCES

1. de Klein, A., et al. 1982. A cellular oncogene is translocated to the Philadelphia chromosome in chronic myelocytic leukemia. Nature 300: 765-767.
2. Konopka, J.B., et al. 1984. An alteration of the human c-Abl protein in K562 leukemic cells unmasks associated tyrosine kinase activity. Cell 37: 1035-1042.
3. Stam, K., et al. 1985. Evidence of a new chimeric Bcr/c-Abl mRNA in patients with chronic myelocytic leukemia and the Philadelphia chromosome. N. Engl. J. Med. 313: 1429-1433.
4. Stam, K., et al. 1987. Evidence that the phl gene encodes a 160,000 dalton phosphoprotein with associated kinase activity. Mol. Cell. Biol. 7: 1955-1960.
5. Wiedmann, L.M., et al. 1988. The correlation of bcr rearrangement of P210 phl/abl expression with morphological analysis of Ph negative CML and other myeloproliferative diseases. Blood 71: 349-355.
6. Dhut, S., et al. 1988. Identification of two normal Bcr gene products in the cytoplasm. Oncogene 3: 561-566.
7. Diekmann, D., et al. 1991. Bcr encodes a GTPase-activating protein for p21rac. Nature 351: 400-402.

CHROMOSOMAL LOCATION

Genetic locus: Bcr (mouse) mapping to 10 B5.3.

PRODUCT

Bcr siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Bcr shRNA Plasmid (m): sc-29796-SH and Bcr shRNA (m) Lentiviral Particles: sc-29796-V as alternate gene silencing products.

For independent verification of Bcr (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-29796A, sc-29796B and sc-29796C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Bcr siRNA (m) is recommended for the inhibition of Bcr expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

Bcr (B-12): sc-28375 is recommended as a control antibody for monitoring of Bcr gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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) 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Bcr gene expression knockdown using RT-PCR Primer: Bcr (m)-PR: sc-29796-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.