

# c-Abl siRNA (m): sc-29844

## BACKGROUND

The Abl oncogene was initially identified as the viral transforming gene of Abelson murine leukemia virus (A-MuLV). The major translational product of c-Abl has been identified as a protein with tyrosine kinase activity and an SH2 domain. The Abl oncogene is implicated in several human leukemias, including 90-95% of chronic myelocytic leukemia (CML), 20-25% of adult acute lymphoblastic leukemia (ALL) and 2-5% of pediatric ALL. In these leukemias the c-Abl proto-oncogene undergoes a (9;22) chromosomal translocation producing the Philadelphia (Ph1) chromosome. The molecular consequence of this translocation is the generation of a chimeric Bcr/c-Abl mRNA encoding activated Abl protein-tyrosine kinase. The Bcr gene has been shown to encode a GTPase-activating protein (GAP) specific for the Ras-related GTP-binding protein, p21rac.

## REFERENCES

1. Abelson, H.T., et al. 1970. Lymphosarcoma: virus-induced thymic-independent disease in mice. *Cancer Res.* 30: 2213-2222.
2. de Klein, A., et al. 1982. A cellular oncogene is translocated to the Philadelphia chromosome in chronic myelocytic leukemia. *Nature* 300: 765-767.
3. Prywes, R., et al. 1983. Sequences of the A-MuLV protein needed for fibroblasts and lymphoid cell transformation. *Cell* 34: 569-579.
4. Konopka, J.B., et al. 1984. An alteration of the human c-Abl protein in K-562 leukemia cells unmasks associated tyrosine kinase activity. *Cell* 37: 1035-1042.

## CHROMOSOMAL LOCATION

Genetic locus: Abl1 (mouse) mapping to 2 B.

## PRODUCT

c-Abl 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see c-Abl shRNA Plasmid (m): sc-29844-SH and c-Abl shRNA (m) Lentiviral Particles: sc-29844-V as alternate gene silencing products.

For independent verification of c-Abl (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-29844A, sc-29844B and sc-29844C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

c-Abl siRNA (m) is recommended for the inhibition of c-Abl 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  $\mu$ M in 66  $\mu$ l. 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

c-Abl (8E9): sc-56887 is recommended as a control antibody for monitoring of c-Abl 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-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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 c-Abl gene expression knockdown using RT-PCR Primer: c-Abl (m)-PR: sc-29844-PR (20  $\mu$ l, 476 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Yang, F.C., et al. 2006. Nf1<sup>+/-</sup> mast cells induce neurofibroma like phenotypes through secreted TGF- $\beta$  signaling. *Hum. Mol. Genet.* 15: 2421-2437.
2. Khusial, P.R., et al. 2010. Src activates Abl to augment Robo1 expression in order to promote tumor cell migration. *Oncotarget* 1: 198-209.
3. Stephens, R.S., et al. 2014. Protein kinase G increases antioxidant function in lung microvascular endothelial cells by inhibiting the c-Abl tyrosine kinase. *Am. J. Physiol., Cell Physiol.* 306: C559-C569.
4. Kang, S., et al. 2018. Semaphorin 6D reverse signaling controls macrophage lipid metabolism and anti-inflammatory polarization. *Nat. Immunol.* 19: 561-570.

## RESEARCH USE

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