

# BTN3A3 siRNA (h): sc-95625

## BACKGROUND

BTN3A3 (butyrophilin subfamily 3 member A3), also known as BTF3, is a 584 amino acid protein belonging to the immunoglobulin superfamily and the BTN/MOG family. As a single-pass type I membrane protein, BTN3A3 contains one B30.2/SPRY domain and two Ig-like V-type (immunoglobulin-like) domains. The gene that encodes BTN3A3 maps to human chromosome 6, which contains around 1,200 genes within 170 million base pairs of sequence. Deletion of a portion of the q arm of chromosome 6 is associated with early onset intestinal cancer suggesting the presence of a cancer susceptibility locus. Notably, the PARK2 gene, which is associated with Parkinson's disease, and the genes encoding the major histocompatibility complex proteins, which are key molecular components of the immune system and determine predisposition to rheumatic diseases, are also located on chromosome 6. Stickler syndrome, 21-hydroxylase deficiency and maple syrup urine disease are also associated with genes on chromosome 6. A bipolar disorder susceptibility locus has been identified on the q arm of chromosome 6.

## REFERENCES

1. Henry, J., et al. 1999. Structure and evolution of the extended B7 family. *Immunol. Today* 20: 285-288.
2. Rhodes, D.A., et al. 2001. The cluster of BTN genes in the extended major histocompatibility complex. *Genomics* 71: 351-362.
3. Mungall, A.J., et al. 2003. The DNA sequence and analysis of human chromosome 6. *Nature* 425: 805-811.
4. Vuorio, M.M., et al. 2004. A stop codon mutation in COL11A2 induces exon skipping and leads to non-ocular Stickler syndrome. *Am. J. Med. Genet. A* 130A: 160-164.
5. McQueen, M.B., et al. 2005. Combined analysis from eleven linkage studies of bipolar disorder provides strong evidence of susceptibility loci on chromosomes 6q and 8q. *Am. J. Hum. Genet.* 77: 582-595.
6. Olsson, K.S., et al. 2007. The HLA-A1-B8 haplotype hitchhiking with the hemochromatosis mutation: does it affect the phenotype? *Eur. J. Haematol.* 79: 429-434.
7. Park, E., et al. 2007. Modulation of parkin gene expression in noradrenergic neuronal cells. *Int. J. Dev. Neurosci.* 25: 491-497.
8. Safadi, S.S. and Shaw, G.S. 2007. A disease state mutation unfolds the parkin ubiquitin-like domain. *Biochemistry* 46: 14162-14169.
9. Bläker, H., et al. 2008. Recurrent deletions at 6q in early age of onset non-HNPCC- and non-FAP-associated intestinal carcinomas. Evidence for a novel cancer susceptibility locus at 6q14-q22. *Genes Chromosomes Cancer* 47: 159-164.

## CHROMOSOMAL LOCATION

Genetic locus: BTN3A3 (human) mapping to 6p22.2.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

## PRODUCT

BTN3A3 siRNA (h) 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 BTN3A3 shRNA Plasmid (h): sc-95625-SH and BTN3A3 shRNA (h) Lentiviral Particles: sc-95625-V as alternate gene silencing products.

For independent verification of BTN3A3 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-95625A, sc-95625B and sc-95625C.

## 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

BTN3A3 siRNA (h) is recommended for the inhibition of BTN3A3 expression in human 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor BTN3A3 gene expression knockdown using RT-PCR Primer: BTN3A3 (h)-PR: sc-95625-PR (20  $\mu$ l, 559 bp). 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.