

# BCMP1 siRNA (m): sc-141678

## BACKGROUND

BCMP1 (brain cell membrane protein 1), also known as TM4SF10 or TMEM47, is a 181 amino acid multi-pass membrane protein belonging to the PMP22/EMP/claudin protein family. Localized to the endoplasmic reticulum, BCMP1 is abundantly expressed in the brain. The gene encoding BCMP1 is located on human chromosome Xp21.1 and mutations in this gene may be associated with impaired brain function leading to mental retardation. Human chromosome X contains nearly 153 million base pairs and houses over 1,000 genes. In conjunction with chromosome Y, chromosome X is responsible for sex determination, as an X and a Y chromosome lead to normal male development, while two copies of an X chromosome lead to normal female development. There are a number of conditions related to an abnormal number and combination of sex chromosomes, some of which include Turner's syndrome, color blindness, hemophilia and Duchenne muscular dystrophy.

## REFERENCES

1. Givens, J.R., et al. 1975. Features of Turner's syndrome in women with polycystic ovaries. *Obstet. Gynecol.* 45: 619-624.
2. Christophe-Hobertus, C., et al. 2001. Identification of the gene encoding brain cell membrane protein 1 (BCMP1), a putative four-transmembrane protein distantly related to the peripheral myelin protein 22/epithelial membrane proteins and the claudins. *BMC Genomics* 2: 3.
3. Bernardino-Sgherri, J., et al. 2002. Overall DNA methylation and chromatin structure of normal and abnormal X chromosomes. *Cytogenet. Genome Res.* 99: 85-91.
4. Simske, J.S., et al. 2003. The cell junction protein VAB-9 regulates adhesion and epidermal morphology in *C. elegans*. *Nat. Cell Biol.* 5: 619-625.
5. Muntoni, F., et al. 2003. Dystrophin and mutations: one gene, several proteins, multiple phenotypes. *Lancet Neurol.* 2: 731-740.
6. Cantagrel, V., et al. 2004. Disruption of a new X linked gene highly expressed in brain in a family with two mentally retarded males. *J. Med. Genet.* 41: 736-742.
7. Christophe-Hobertus, C., et al. 2004. TM4SF10 gene sequencing in XLMR patients identifies common polymorphisms but no disease-associated mutation. *BMC Med. Genet.* 5: 22.

## CHROMOSOMAL LOCATION

Genetic locus: Tmem47 (mouse) mapping to X B.

## PRODUCT

BCMP1 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 BCMP1 shRNA Plasmid (m): sc-141678-SH and BCMP1 shRNA (m) Lentiviral Particles: sc-141678-V as alternate gene silencing products.

For independent verification of BCMP1 (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-141678A, sc-141678B and sc-141678C.

## 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

BCMP1 siRNA (m) is recommended for the inhibition of BCMP1 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor BCMP1 gene expression knockdown using RT-PCR Primer: BCMP1 (m)-PR: sc-141678-PR (20  $\mu$ l). 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](http://www.scbt.com) for detailed protocols and support products.