



ARL13A siRNA (m): sc-141238

BACKGROUND

ADP-ribosylation factors (ARFs) are highly conserved guanine nucleotide binding proteins that enhance the ADP-ribosyltransferase activity of cholera toxin. ARFs are important in eukaryotic vesicular trafficking pathways and play an essential role in the activation of phospholipase D (PC-PLD). ARL13A (ADP-ribosylation factor-like 13A) is a 290 amino acid protein that belongs to the small GTPase superfamily and the ARF family. Conserved in chimpanzee, bovine, mouse and rat, ARL13A participates in GTP binding activity and is encoded by a gene that maps to human chromosome Xq22.1. Chromosome X consists of nearly 153 million base pairs encoding approximately 1,000 genes. More than one copy of the X chromosome with a Y chromosome causes Klinefelter's syndrome. A single copy of X alone leads to Turner's syndrome. More than two copies of the X chromosome, in the absence of a Y chromosome, is known as Triple X syndrome. Color blindness, hemophilia, and Duchenne muscular dystrophy are X chromosome-linked conditions that affect males more frequently because males carry a single X chromosome.

REFERENCES

1. Givens, J.R., et al. 1975. Features of Turner's syndrome in women with polycystic ovaries. *Obstet. Gynecol.* 45: 619-624.
2. Bernardino-Sgherri, J., et al. 2002. Overall DNA methylation and chromatin structure of normal and abnormal X chromosomes. *Cytogenet. Genome Res.* 99: 85-91.
3. Muntoni, F., et al. 2003. Dystrophin and mutations: one gene, several proteins, multiple phenotypes. *Lancet Neurol.* 2: 731-740.
4. Deeb, S.S. 2005. The molecular basis of variation in human color vision. *Clin. Genet.* 67: 369-377.
5. Bojesen, A., et al. 2006. The metabolic syndrome is frequent in Klinefelter's syndrome and is associated with abdominal obesity and hypogonadism. *Diabetes Care* 29: 1591-1598.
6. Kahn, R.A., et al. 2006. Nomenclature for the human Arf family of GTP-binding proteins: ARF, ARL, and SAR proteins. *J. Cell Biol.* 172: 645-650.
7. Hayashi, T., et al. 2006. Novel form of a single X-linked visual pigment gene in a unique dichromatic color-vision defect. *Vis. Neurosci.* 23: 411-417.
8. Rolle, U., et al. 2007. Duodenal atresia in an infant with triple-X syndrome: a new associated malformation in 47,XXX. *Birth Defects Res. A, Clin. Mol. Teratol.* 79: 612-613.
9. Augui, S., et al. 2007. Sensing X chromosome pairs before X inactivation via a novel X-pairing region of the Xic. *Science* 318: 1632-1636.

CHROMOSOMAL LOCATION

Genetic locus: Arl13a (mouse) mapping to X E3.

PROTOCOLS

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

PRODUCT

ARL13A 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ARL13A shRNA Plasmid (m): sc-141238-SH and ARL13A shRNA (m) Lentiviral Particles: sc-141238-V as alternate gene silencing products.

For independent verification of ARL13A (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-141238A, sc-141238B and sc-141238C.

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

APPLICATIONS

ARL13A siRNA (m) is recommended for the inhibition of ARL13A 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 μ M in 66 μ 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 ARL13A gene expression knockdown using RT-PCR Primer: ARL13A (m)-PR: sc-141238-PR (20 μ 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.