



IRG1 siRNA (m): sc-146287

BACKGROUND

IRG1 (immunoresponsive 1) is a 481 amino acid protein that belongs to the prpD family and is encoded by a gene which maps to human chromosome 13q22.3. Comprising nearly 4% of the human genome, chromosome 13 contains around 114 million base pairs and encodes over 400 genes. Chromosome 13 houses key tumor suppressor genes, including BRCA2 and RB1, which are associated with breast cancer susceptibility and retinoblastoma, respectively. Trisomy 13, also known as Patau syndrome, is deadly and the few who survive past one year suffer from permanent neurologic defects, difficulty eating and vulnerability to serious respiratory infections.

REFERENCES

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6. Hsu, H.F. and Hou, J.W. 2007. Variable expressivity in Patau syndrome is not all related to trisomy 13 mosaicism. *Am. J. Med. Genet. A* 143A: 1739-1748.
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8. Hassler, M., et al. 2007. Crystal structure of the retinoblastoma protein N domain provides insight into tumor suppression, ligand interaction and holoprotein architecture. *Mol. Cell* 28: 371-385.
9. Thorslund, T. and West, S.C. 2007. BRCA2: a universal recombinase regulator. *Oncogene* 26: 7720-7730.

CHROMOSOMAL LOCATION

Genetic locus: Irg1 (mouse) mapping to 14 E2.3.

PRODUCT

IRG1 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 IRG1 shRNA Plasmid (m): sc-146287-SH and IRG1 shRNA (m) Lentiviral Particles: sc-146287-V as alternate gene silencing products.

For independent verification of IRG1 (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-146287A, sc-146287B and sc-146287C.

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

IRG1 siRNA (m) is recommended for the inhibition of IRG1 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 IRG1 gene expression knockdown using RT-PCR Primer: IRG1 (m)-PR: sc-146287-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Jamal Uddin, M., et al. 2016. IRG1 induced by heme oxygenase-1/carbon monoxide inhibits LPS-mediated sepsis and pro-inflammatory cytokine production. *Cell. Mol. Immunol.* 13: 170-179.
2. Domínguez-Andrés, J., et al. 2019. The itaconate pathway is a central regulatory node linking innate immune tolerance and trained immunity. *Cell Metab.* 29: 211-220.e5.
3. Ren, J., et al. 2022. Dimethyl itaconate inhibits neuroinflammation to alleviate chronic pain in mice. *Neurochem. Int.* E-published.

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.