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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

Visual Arrestin siRNA (m): sc-45468

BACKGROUND

Members of Arrestin/ β -arrestin protein family are thought to participate in agonist-mediated desensitization of G protein-coupled receptors and cause specific dampening of cellular responses to stimuli such as hormones, neurotransmitters, or sensory signals. Visual Arrestin, also known as Arrestin, retinal S-antigen or S-Arrestin, is a major soluble photoreceptor protein that regulates light-dependent signal transduction through G protein-coupled receptor (rhodopsin) activation. Visual Arrestin is expressed in retinal photoreceptor cells and the pineal gland. Visual Arrestin is the major pathogenic autoantigen in inflammatory eye disease, such as uveoretinitis and Oguchi disease, a rare autosomal recessive form of night blindness.

REFERENCES

1. Banga, J.P., et al. 1988. Analysis of antigenic determinants of retinal S-antigen with monoclonal antibodies. *Invest. Ophthalmol. Vis. Sci.* 29: 12-21.
2. Palczewski, K., et al. 1989. Regulation of rhodopsin dephosphorylation by Arrestin. *J. Biol. Chem.* 264: 15770-15773.
3. Yamaki, K., et al. 1990. Structural organization of the human S-antigen gene. cDNA, amino acid, intron, exon, promoter, *in vitro* transcription, retina and pineal gland. *J. Biol. Chem.* 265: 20757-20762.
4. Roberts, A.J., et al. 1992. Induction of experimental autoimmune uveoretinitis in Lewis rats with purified recombinant human retinal S-antigen fusion protein. *Eur. J. Immunol.* 22: 951-956.
5. Saga, M., et al. 2004. Gene analysis and evaluation of the single founder effect in Japanese patients with Oguchi disease. *Jpn. J. Ophthalmol.* 48: 350-352.

CHROMOSOMAL LOCATION

Genetic locus: Sag (mouse) mapping to 1 D.

PRODUCT

Visual Arrestin 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 Visual Arrestin shRNA Plasmid (m): sc-45468-SH and Visual Arrestin shRNA (m) Lentiviral Particles: sc-45468-V as alternate gene silencing products.

For independent verification of Visual Arrestin (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-45468A, sc-45468B and sc-45468C.

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.

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

Visual Arrestin siRNA (m) is recommended for the inhibition of Visual Arrestin 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.

GENE EXPRESSION MONITORING

Visual Arrestin (E-3): sc-166383 is recommended as a control antibody for monitoring of Visual Arrestin 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 κ BP-HRP: sc-516102 or m-IgG κ 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 κ BP-FITC: sc-516140 or m-IgG κ 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 Visual Arrestin gene expression knockdown using RT-PCR Primer: Visual Arrestin (m)-PR: sc-45468-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.