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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](mailto:mail@szabo-scandic.com)

[www.szabo-scandic.com](http://www.szabo-scandic.com)

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

# Cryopyrin siRNA (m): sc-45470

## BACKGROUND

Cryopyrin interacts selectively with apoptosis-associated specklike protein containing a CARD domain (ASC). This complex may function as an upstream activator of NF $\kappa$ B signaling and caspase-1 activation. The complex also inhibits TNF $\alpha$  induced activation and nuclear translocation of RelA/NF $\kappa$ B p65. Mutations in Cryopyrin and Pyrin proteins are responsible for several autoinflammatory disorders in humans, including familial cold autoinflammatory syndrome (FCAS), Muckle-Wells syndrome (MWS) and chronic infantile neurologic cutaneous and articular syndrome (CINCA).

## REFERENCES

1. Dode, C., et al. 2002. New mutations of CIAS1 that are responsible for Muckle-Wells syndrome and familial cold urticaria: a novel mutation underlies both syndromes. *Am. J. Hum. Genet.* 70: 1498-1506.
2. Feldmann, J., et al. 2002. Chronic infantile neurological cutaneous and articular syndrome is caused by mutations in CIAS1, a gene highly expressed in polymorphonuclear cells and chondrocytes. *Am. J. Hum. Genet.* 71: 198-203.
3. Rosengren, S., et al. 2005. Expression and regulation of Cryopyrin and related proteins in rheumatoid arthritis synovium. *Ann. Rheum. Dis.* 64: 708-714.
4. Bihl, T., et al. 2005. The T348M mutated form of Cryopyrin is associated with defective lipopolysaccharide-induced interleukin 10 production in CINCA syndrome. *Ann. Rheum. Dis.* 64: 1380-1381.
5. Yu, J.W., et al. 2005. Cryopyrin and Pyrin activate caspase-1, but not NF $\kappa$ B, via ASC oligomerization. *Cell Death Differ.* 13: 236-249.

## CHROMOSOMAL LOCATION

Genetic locus: Nlrp3 (mouse) mapping to 11 B1.3.

## PRODUCT

Cryopyrin 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 Cryopyrin shRNA Plasmid (m): sc-45470-SH and Cryopyrin shRNA (m) Lentiviral Particles: sc-45470-V as alternate gene silencing products.

For independent verification of Cryopyrin (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-45470A, sc-45470B and sc-45470C.

## 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

Cryopyrin siRNA (m) is recommended for the inhibition of Cryopyrin 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 Cryopyrin gene expression knockdown using RT-PCR Primer: Cryopyrin (m)-PR: sc-45470-PR (20  $\mu$ l, 464 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Cao, Z., et al. 2016. Exposure to nickel oxide nanoparticles induces pulmonary inflammation through NLRP3 inflammasome activation in rats. *Int. J. Nanomedicine* 11: 3331-3346.
2. Li, F., et al. 2018. NLRP3 deficiency accelerates pressure overload-induced cardiac remodeling via increased TLR4 expression. *J. Mol. Med.* 96: 1189-1202.
3. Gan, W., et al. 2018. The SGK1 inhibitor EMD638683, prevents Angiotensin II-induced cardiac inflammation and fibrosis by blocking NLRP3 inflammasome activation. *Biochim. Biophys. Acta Mol. Basis Dis.* 1864: 1-10.
4. Liu, H., et al. 2019. Ventilator-induced lung injury is alleviated by inhibiting NLRP3 inflammasome activation. *Mol. Immunol.* 111: 1-10.
5. Molagoda, I.M.N., et al. 2019. Deoxyribose enhances IL-1 $\beta$  expression in BV2 microglial cells through activation of the NF $\kappa$ B pathway and the ASC/NLRP3 inflammasome. *EXCLI J.* 18: 356-369.
6. Zhi, X., et al. 2019. NLRP3 inflammasome activation by foot-and-mouth disease virus infection mainly induced by viral RNA and non-structural protein 2B. *RNA Biol.* 17: 335-349.

## 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.