SANTA CRUZ BIOTECHNOLOGY, INC.

# AIM2 siRNA (m): sc-140968

## BACKGROUND

Interferon-inducible protein AIM2 (absent in melanoma 2) is a 343 amino acid protein belonging to the HIN-200 family. Induced by IFN-γ, AIM2 is thought to act as a tumor suppressor by repressing NFκB transcriptional activity. Localized to the nucleus, AIM2 contains one DAPIN domain and one HIN-200 domain. The DAPIN domain is composed mostly of α-helixes and is a protein-protein interaction domain capable of binding other DAPIN domains. The HIN-200 domain has been shown to bind directly to DNA, which, along with the binding of another protein ASC, results in the activation of caspase-1. AIM2 is present as a homodimer and is expressed highly in small intestine, testis, peripheral blood leukocytes and spleen. Defects in AIM2 are believed to be a cause of microsatellite unstable colon cancers.

## REFERENCES


1. DeYoung, K.L., et al. 1997. Cloning a novel member of the human interferon-inducible gene family associated with control of tumorigenicity in a model of human melanoma. Oncogene 15: 453-457.
2. Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 604578. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Cresswell, K.S., et al. 2005. Biochemical and growth regulatory activities of the HIN-200 family member and putative tumor suppressor protein, AIM2. Biochem. Biophys. Res. Commun. 326: 417-424.
4. Chen, I.F., et al. 2006. AIM2 suppresses human breast cancer cell proliferation *in vitro* and mammary tumor growth in a mouse model. Mol. Cancer Ther. 5: 1-7.
5. Woerner, S.M., et al. 2007. The putative tumor suppressor AIM2 is frequently affected by different genetic alterations in microsatellite unstable colon cancers. Genes Chromosomes Cancer 46: 1080-1089.
6. Fernandes-Alnemri, T., et al. 2009. AIM2 activates the inflammasome and cell death in response to cytoplasmic DNA. Nature 458: 509-513.
7. Hornung, V., et al. 2009. AIM2 recognizes cytosolic dsDNA and forms a caspase-1-activating inflammasome with ASC. Nature 458: 514-518.


## CHROMOSOMAL LOCATION

Genetic locus: Aim2 (mouse) mapping to 1 H3.

## PRODUCT

AIM2 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see AIM2 shRNA Plasmid (m): sc-140968-SH and AIM2 shRNA (m) Lentiviral Particles: sc-140968-V as alternate gene silencing products.

For independent verification of AIM2 (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-140968A, sc-140968B and sc-140968C.

## 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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

AIM2 siRNA (m) is recommended for the inhibition of AIM2 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 µM in 66 µl. 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

AIM2 (3C4G11): sc-293174 is recommended as a control antibody for monitoring of AIM2 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).

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor AIM2 gene expression knockdown using RT-PCR Primer: AIM2 (m)-PR: sc-140968-PR (20 µl, 583 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS


1. Zhang, W., et al. 2013. AIM2 facilitates the apoptotic DNA-induced systemic lupus erythematosus via arbitrating macrophage functional maturation. J. Clin. Immunol. 33: 925-937.
2. Zhong, Z., et al. 2017. Papilloma-pseudovirus eradicates intestinal tumours and triples the lifespan of $Apc^{Min/+}$ mice. Nat. Commun. 8: 15004.
3. Lin, T., et al. 2022. NET-triggered NLRP3 activation and IL-18 release drive oxaliplatin-induced peripheral neuropathy. Cancer Immunol. Res. E-published.


## RESEARCH USE

For research use only, not for use in diagnostic procedures.