

TDO2 siRNA (m): sc-154157

BACKGROUND

TDO2 (tryptophan 2,3-dioxygenase), also known as TO (tryptophan oxygenase) or TRPO (tryptophan pyrrolase), is a 406 amino acid protein that belongs to the tryptophan 2,3-dioxygenase family. As a homotetramer, TDO2 binds two heme groups per tetramer. TDO2 has broad specificity towards tryptamine and derivatives including D- and L-tryptophan, 5-hydroxytryptophan and serotonin, and it incorporates oxygen into the indole moiety of tryptophan. In doing so, TDO2 plays a major role in the tryptophan metabolism pathway. The gene that encodes TDO2 consists of approximately 65,669 bases and maps to human chromosome 4q32. Chromosome 4 represents approximately 6% of the human genome and contains nearly 900 genes. Notably, the Huntington gene, which is found to encode an expanded glutamine tract in cases of Huntington's disease, is on chromosome 4. Chromosome 4 is also tied to Ellis-van Creveld syndrome, methylmalonic acidemia, polycystic kidney disease, thanatophoric dwarfism, achondroplasia, Muenke syndrome and bladder cancer.

REFERENCES

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CHROMOSOMAL LOCATION

Genetic locus: Tdo2 (mouse) mapping to 3 E3.

PRODUCT

TDO2 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 TDO2 shRNA Plasmid (m): sc-154157-SH and TDO2 shRNA (m) Lentiviral Particles: sc-154157-V as alternate gene silencing products.

For independent verification of TDO2 (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-154157A, sc-154157B and sc-154157C.

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

TDO2 siRNA (m) is recommended for the inhibition of TDO2 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 TDO2 gene expression knockdown using RT-PCR Primer: TDO2 (m)-PR: sc-154157-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. Takenaka, M.C., et al. 2019. Control of tumor-associated macrophages and T cells in glioblastoma via AHR and CD39. *Nat. Neurosci.* 22: 729-740.

RESEARCH USE

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