SANTA CRUZ BIOTECHNOLOGY, INC.

COPT2 siRNA (m): sc-142512

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The Power to Question

BACKGROUND

The activity of a diverse subset of enzymes relies on the essential nutrient copper to perform important processes including signaling to the transcription and protein trafficking machinery, oxidative phosphorylation, iron mobilization, neuropeptide maturation, and normal development. Copper uptake requires tight regulation to ensure that sufficient copper is present in the cell to drive vital cellular processes, while avoiding the accumulation of copper to toxic levels. The copper transporter 2 (COPT2), also designated CTR2 or Solute carrier family 31 member 2 (SLC31A2), is a 143 amino acid protein mediates the uptake of copper in mammalian cells. COPT2 has been shown to localize to the plasma membrane, endosomes and lysosomes, where it plays a role in maintaining copper homeostasis. COPT2 also mediates the uptake of the chemotherapeutic drugs Cisplatin and Carboplatin and may modulate the sensitivity and toxicity of these drugs.

REFERENCES

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2. Rees, E.M., Lee, J. and Thiele, D.J. 2004. Mobilization of intracellular copper stores by the ctr2 vacuolar copper transporter. J. Biol. Chem. 279: 54221-54229.
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5. Bertinato, J., Swist, E., Plouffe, L.J., Brooks, S.P. and L'abbe, M.R. 2008. Ctr2 is partially localized to the plasma membrane and stimulates copper uptake in COS-7 cells. Biochem. J. 409: 731-740.
6. Blair, B.G., Larson, C.A., Safaei, R. and Howell, S.B. 2009. Copper transporter 2 regulates the cellular accumulation and cytotoxicity of Cisplatin and Carboplatin. Clin. Cancer Res. 15: 4312-4321.

CHROMOSOMAL LOCATION

Genetic locus: Slc31a2 (mouse) mapping to 4 B3.

PRODUCT

COPT2 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 COPT2 shRNA Plasmid (m): sc-142512-SH and COPT2 shRNA (m) Lentiviral Particles: sc-142512-V as alternate gene silencing products.

For independent verification of COPT2 (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-142512A, sc-142512B and sc-142512C.

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

COPT2 siRNA (m) is recommended for the inhibition of COPT2 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor COPT2 gene expression knockdown using RT-PCR Primer: COPT2 (m)-PR: sc-142512-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.