SANTA CRUZ BIOTECHNOLOGY, INC.

CRABP-II siRNA (h): sc-35105

BACKGROUND

The cellular retinoic acid-binding protein (CRABP)-I and a related isoform, CRABP-II, bind retinoic acid (RA), an important regulator of cell growth and differentiation in fetal and adult tissues. These CRABP proteins mediate the downstream effects of RA in distinct ways. CRABP-I negatively regulates the activity of RA by enhancing the production of RA-metabolizing enzymes and increasing the rate at which RA is degraded. CRABP-II enhances the effects of RA by directly interacting with RA receptors (RAR) and, in turn, promoting the formation of RAR-RA complexes and stimulating RA-mediated gene transcription. Both CRABP-I and CRABP-II are expressed in the embryo, and CRABP-I is ubiquitously expressed in various adult tissues. The expression of CRABP-II is elevated in cells that synthesize relatively large amounts of RA, and it is also predominantly expressed in skin, uterus, ovary and in the choroid plexus.

REFERENCES

1. Wei, L.N., et al. 1990. Molecular cloning and transcriptional mapping of the mouse cellular retinoic acid-binding protein gene. DNA Cell Biol. 9: 471-478.
2. Giguere, V., et al. 1990. Molecular cloning of cDNA encoding a second cellular retinoic acid-binding protein. Proc. Natl. Acad. Sci. USA 87: 6233-6237.
3. Boylan, J.F. and Gudas, L.J. 1992. The level of CRABP-I expression influences the amounts and types of all-*trans*-retinoic acid metabolites in F9 teratocarcinoma stem cells. J. Biol. Chem. 267: 21486-21491.
4. Gorry, P., et al. 1994. The cellular retinoic acid binding protein I is dispensable. Proc. Natl. Acad. Sci. USA 91: 9032-9036.

CHROMOSOMAL LOCATION

Genetic locus: CRABP2 (human) mapping to 1q23.1.

PRODUCT

CRABP-II siRNA (h) 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 CRABP-II shRNA Plasmid (h): sc-35105-SH and CRABP-II shRNA (h) Lentiviral Particles: sc-35105-V as alternate gene silencing products.

For independent verification of CRABP-II (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-35105A, sc-35105B and sc-35105C.

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

CRABP-II siRNA (h) is recommended for the inhibition of CRABP-II expression in human 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

CRABP-I/II (F-9): sc-166897 is recommended as a control antibody for monitoring of CRABP-II 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 CRABP-II gene expression knockdown using RT-PCR Primer: CRABP-II (h)-PR: sc-35105-PR (20 µl, 431 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Gupta, A., et al. 2006. Cellular retinoic acid-binding protein II is a direct transcriptional target of MycN in neuroblastoma. Cancer Res. 66: 8100-8108.
2. Thulasiraman, P., et al. 2017. Activation of the CRABPII/RAR pathway by curcumin induces retinoic acid mediated apoptosis in retinoic acid resistant breast cancer cells. Oncol. Rep. 37: 2007-2015.
3. Xie, T., et al. 2022. CRABP2 accelerates epithelial mesenchymal transition in serous ovarian cancer cells by promoting TRIM16 methylation via up-regulating EZH2 expression. Environ. Toxicol. 37: 1957-1967.
4. Liu, C.L., et al. 2022. CRABP2 is associated with thyroid cancer recurrence and promotes invasion via the integrin/FAK/AKT pathway. Endocrinology 163: bqac171.

RESEARCH USE

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