SANTA CRUZ BIOTECHNOLOGY, INC.

Calbindin D9K siRNA (m): sc-45865

BACKGROUND

The family of EF-hand type Ca^{2+}-binding proteins includes Calbindin D28K (previously designated vitamin D-dependent Ca^{2+}-binding protein), Calbindin D9K, S-100 α and β, Calgranulin A (also designated MRP8), Calgranulin B (also designated MRP14) and Calgranulin C, and the Parvalbumin family members, including Parvalbumin α and Parvalbumin β (also designated oncomodulin). The gene encoding human Calbindin D9K is located on the X chromosome and consists of three exons and contains four Alu repeats. Calbindin D9K protein is present in cartilage, bone and certain teeth, such as the ameloblasts of incisors and molars. In addition, Calbindin D9K mRNA is detected in proximal small intestine, but not in human kidney, uterus or placenta (however, the protein is present in these tissues in other species). Rat Calbindin D9K binds the estrogen receptor because the gene encoding it contains an estrogen response element downstream from its promoter. In contrast, the homologous human sequence differs by two essential nucleotides and does not bind the estrogen receptor, suggesting that this change suppresses gene expression in human tissues, such as uterus and possibly placenta.

REFERENCES

1. Bruns, M.E., et al. 1977. Control of vitamin D-dependent calcium-binding protein in rat intestine by growth and fasting. J. Biol. Chem. 252: 4145-4150.
2. Bruns, M.E., et al. 1978. Placental calcium binding protein in rats. Apparent identity with vitamin D-dependent calcium binding protein from rat intestine. J. Biol. Chem. 253: 3186-3190.
3. Marche, P., et al. 1978. Intestinal and placental calcium-binding proteins in vitamin D-deprived or -supplemented rats. Life Sci. 23: 2555-2561.
4. Delorme, A.C., et al. 1979. Vitamin D-dependent calcium-binding protein. Changes during gestation, prenatal and postnatal development in rats. J. Dev. Physiol. 3: 181-194.
5. Garel, J.M., et al. 1981. C cell activity during the prenatal and postnatal periods in the rat. Endocrinology 109: 1573-1577.
6. Delorme, A.C., et al. 1982. Biochemical characterization of mouse vitamin D-dependent calcium-binding protein. Evidence for its presence in embryonic life. Biochem. J. 205: 49-57.
7. Bruns, M.E., et al. 1985. Immunochemical localization of vitamin D-dependent calcium-binding protein in mouse placenta and yolk sac. Anat. Rec. 213: 514-517, 532-535.
8. Heizmann, C.W. 1988. Calcium-binding proteins of the EF-type. J. Cardiovasc. Pharmacol. 5: 30-37.
9. Mathieu, C.L., et al. 1989. Gestational changes in Calbindin-D9k in rat uterus, yolk sac, and placenta: implications for maternal-fetal calcium transport and uterine muscle function. Proc. Natl. Acad. Sci. USA 86: 3433-3437.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

CHROMOSOMAL LOCATION

Genetic locus: S100g (mouse) mapping to X F4.

PRODUCT

Calbindin D9K 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 Calbindin D9K shRNA Plasmid (m): sc-45865-SH and Calbindin D9K shRNA (m) Lentiviral Particles: sc-45865-V as alternate gene silencing products.

For independent verification of Calbindin D9K (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-45865A, sc-45865B and sc-45865C.

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

Calbindin D9K siRNA (m) is recommended for the inhibition of Calbindin D9K 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.

RESEARCH USE

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