

APC siRNA (m): sc-29703

BACKGROUND

The adenomatous polyposis syndromes, familial adenomatous polyposis (FAP) and Gardner's syndrome (GS), are characterized by numerous adenomatous polyps throughout the entire colon. These polyps invariably progress to colon cancer in addition to other extracolonic manifestations. The cloning of the APC gene revealed a ubiquitously expressed protein, 2,843 amino acids in length, which is frequently mutated in patients suffering from FAP and GS. APC has been found to be associated with structural components of intracellular junctions. β -catenin and γ -catenin (also called plakoglobin), are involved in the regulation of cellular adhesion. APC and E-cadherin compete for binding to specific internal regions of both β - and γ -catenin. Interactions between cytoskeleton and the APC, E-cadherin, β/γ catenin complex are mediated by α -catenin.

REFERENCES

1. Nishisho, I., et al. 1991. Mutations of chromosome 5q21 genes in FAP and colorectal cancer patients. *Science* 253: 665-669.
2. Olschwang, S., et al. 1995. High resolution genetic map of the adenomatous polyposis coli gene (APC) region. *Am. J. Med. Genet.* 56: 413-419.
3. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 611731. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Janssen, K.P., et al. 2006. APC and oncogenic KRAS are synergistic in enhancing Wnt signaling in intestinal tumor formation and progression. *Gastroenterology* 131: 1096-1109.

CHROMOSOMAL LOCATION

Genetic locus: *Apc* (mouse) mapping to 18 B1.

PRODUCT

APC 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 APC shRNA Plasmid (m): sc-29703-SH and APC shRNA (m) Lentiviral Particles: sc-29703-V as alternate gene silencing products.

For independent verification of APC (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-29703A, sc-29703B and sc-29703C.

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

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

GENE EXPRESSION MONITORING

APC (F-3): sc-9998 is recommended as a control antibody for monitoring of APC 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 APC gene expression knockdown using RT-PCR Primer: APC (m)-PR: sc-29703-PR (20 μ l, 416 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Farías, G.G., et al. 2007. Wnt-7a induces presynaptic colocalization of $\alpha 7$ -nicotinic acetylcholine receptors and adenomatous polyposis coli in hippocampal neurons. *J. Neurosci.* 27: 5313-5325.
2. Larabee, J.L., et al. 2011. Adenomatous polyposis coli protein associates with C/EBP β and increases *Bacillus anthracis* edema toxin-stimulated gene expression in macrophages. *J. Biol. Chem.* 286: 19364-19372.

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.