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SANTA CRUZ BIOTECHNOLOGY, INC.

PMS1 siRNA (m): sc-45504

BACKGROUND

The finding that mutations in DNA mismatch repair genes are associated with hereditary nonpolyposis colorectal cancer (HNPCC) has resulted in considerable interest in the understanding of the mechanism of DNA mismatch repair. Initially, inherited mutations in the MSH2 and MLH1 homologs of the bacterial DNA mismatch repair genes MutS and MutL were demonstrated at high frequency in HNPCC and were shown to be associated with microsatellite instability. The demonstration that 10 to 45% of pancreatic, gastric, breast, ovarian and small cell lung cancers also display microsatellite instability has been interpreted to suggest that DNA mismatch repair is not restricted to HNPCC tumors but is a common feature in tumor initiation or progression. Two additional homologs of the prokaryotic MutL gene, designated PMS1 and PMS2, have been identified and shown to be mutated in the germline of HNPCC patients.

REFERENCES

1. Peltomäki, P., et al. 1993. Genetic mapping of a locus predisposing to human colorectal cancer. Science 260: 810-812.
2. Ionov, Y., et al. 1993. Ubiquitous somatic mutations in simple repeated sequences reveal a new mechanism for colonic carcinogenesis. Nature 363: 558-561.
3. Papadopoulos, N., et al. 1994. Mutation of a MutL homolog in hereditary colon cancer. Science 263: 1625-1629.
4. Prolla, T.A., et al. 1994. MLH1, Pms1, and Msh2 interactions during the initation of DNA mismatch repair in yeast. Science 265: 1091-1092.
5. Palombo, F., et al. 1994. Mismatch repair and cancer. Nature 367: 417-418.
6. Bronner, C.E., et al. 1994. Mutation in the DNA mismatch repair gene homologue hMLH1 is associated with hereditary non-polyposis colon cancer. Nature 368: 258-261.
7. Nicolaides, N.C., et al. 1994. Mutations of two PMS homologues in hereditary nonpolyposis colon cancer. Nature 371: 75-80.

CHROMOSOMAL LOCATION

Genetic locus: Pms1 (mouse) mapping to 1 C1.1.

PRODUCT

PMS1 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 PMS1 shRNA Plasmid (m): sc-45504-SH and PMS1 shRNA (m) Lentiviral Particles: sc-45504-V as alternate gene silencing products.

For independent verification of PMS1 (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-45504A, sc-45504B and sc-45504C.

RESEARCH USE

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

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

PMS1 siRNA (m) is recommended for the inhibition of PMS1 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 PMS1 gene expression knockdown using RT-PCR Primer: PMS1 (m)-PR: sc-45504-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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