



MSH2 (h): 293 Lysate: sc-172434

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. Ionov, Y., Peinado, M.A., Malkhosyan, S., Shibata, D. and Perucho, M. 1993. Ubiquitous somatic mutations in simple repeated sequences reveal a new mechanism for colonic carcinogenesis. *Nature* 363: 558-561.
2. Peltomäki, P., Aaltonen, L.A., Sistonen, P., Pylkkänen, L., Mecklin, J.P., Järvinen, H., Green, J.S., Jass, J.R., Weber, J.L., Leach, F.S., Petersen, G.M., Hamilton, S.R., de la Chapelle, A. and Vogelstein, B. 1993. Genetic mapping of a locus predisposing to human colorectal cancer. *Science* 260: 810-812.
3. Papadopoulos, N., Nicolaides, N.C., Wei, Y.F., Ruben, S.M., Carter, K.C., Rosen, C.A., Haseltine, W.A., Fleischmann, R.D., Fraser, C.M., Adams, M.D., Venter, J.C., Hamilton, S.R., Peterson, G.M., Watson, P., Lynch, H.T., Peltomäki, P., Mecklin, J.P., de la Chapelle, A., Kinzler, K.W., et al. 1994. Mutation of a mutL homolog in hereditary colon cancer. *Science* 263: 1625-1629.
4. Prolla, T.A., Pang, Q., Alani, E., Kolodner, R.D. and Liskay, R.M. 1994. MLH1, PMS1, and MSH2 interactions during the initiation of DNA mismatch repair in yeast. *Science* 265: 1091-1092.
5. Palombo, F., Hughes, M. and Jiricny, J. 1994. Mismatch repair and cancer. *Nature* 367: 417-418.
6. Bronner, C.E., Baker, S.M., Morrison, P.T., Warren, G., Smith, L.G., Lescoe, M.K., Kane, M., Earabino, C., Lipford, J. and Lindblom, A. 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., Papadopoulos, N., Liu, B., Wei, Y.F., Carter, K.C., Ruben, S.M., Rosen, C.A., Haseltine, W.A., Fleischmann, R.D., Fraser, C.M., Adams, M.D., Venter, J.C., Dunlop, M.G., Hamilton, S.R., Peterson, G.M., de la Chapelle, A., Vogelstein, B. and Kinzler, K.W. 1994. Mutations of two PMS homologues in hereditary nonpolyposis colon cancer. *Nature* 371: 75-80.

CHROMOSOMAL LOCATION

Genetic locus: MSH2 (human) mapping to 2p21.

RESEARCH USE

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

PRODUCT

MSH2 (h): 293 Lysate represents a lysate of human MSH2 transfected 293 cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

MSH2 (h): 293 Lysate is suitable as a Western Blotting positive control for human reactive MSH2 antibodies. Recommended use: 10-20 µl per lane.

Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-transfected 293 cells.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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