

GTBP (m): 293T Lysate: sc-120676

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. A member of the mismatch repair family, GTBP (also designated MSH6), is a MSH2-related protein that binds to DNA containing G/T mismatches. Findings suggest that the mismatch-binding factor in human cells is composed of a heterodimer of GTBP and MSH2.

REFERENCES

1. 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., et al. 1993. Genetic mapping of a locus predisposing to human colorectal cancer. *Science* 260: 810-812.
2. 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., et al. 1994. Mutation of a mutL homolog in hereditary colon cancer. *Science* 263: 1625-1629.
3. 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: 1091-1093.
4. Palombo, F., Hughes, M., Jiricny, J., Truong, O. and Hsuan, J. 1994. Mismatch repair and cancer. *Nature* 367: 417-418.
5. Bronner, C.E., Baker, S.M., Morrison, P.T., Warren, G., Smith, L.G., Lescoe, M.K., Kane, M., Earabino, C., Lipford, J., Lindblom, A., et al. 1994. Mutation in the DNA mismatch repair gene homologue hMLH1 is associated with hereditary non-polyposis colon cancer. *Nature* 368: 258-261.
6. 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., et al. 1994. Mutations of two PMS homologues in hereditary nonpolyposis colon cancer. *Nature* 371: 75-80.
7. Palombo, F., Gallinari, P., Iaccarino, I., Lettieri, T., Hughes, M., D'Arrigo, A., Truong, O., Hsuan, J.J. and Jiricny, J. 1995. GTBP, a 160-kilodalton protein essential for mismatch-binding activity in human cells. *Science* 268: 1912-1914.
8. Shiwaku, H.O., Wakatsuki, S., Mori, Y., Fukushige, S. and Horii, A. 1997. Alternative splicing of GTBP in normal human tissues. *DNA Res.* 4: 359-362.
9. Ercoli, A., Ferrandina, G., Raspaglio, G., Marone, M., Maggiano, N., Del Mastro, P., Benedetti Panici, P., Mancuso, S. and Scambia, G. 1999. hMSH2 and GTBP expression in advanced stage epithelial ovarian cancer. *Br. J. Cancer* 80: 1665-1671.

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.

CHROMOSOMAL LOCATION

Genetic locus: Msh6 (mouse) mapping to 17 E4.

PRODUCT

GTBP (m): 293T Lysate represents a lysate of mouse GTBP transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

GTBP (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive GTBP antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

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.