SANTA CRUZ BIOTECHNOLOGY, INC.

GTBP (F-1): sc-271979

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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., et al. 1993. Genetic mapping of a locus predisposing to human colorectal cancer. Science 260: 810-812.
2. Palombo, F., et al. 1994. Mismatch repair and cancer. Nature 367: 417-418.
3. 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.
4. Papadopoulos, N., et al. 1994. Mutation of a MutL homolog in hereditary colon cancer. Science 263: 1625-1629.
5. Nicolaides, N.C., et al. 1994. Mutations of two PMS homologues in hereditary nonpolyposis colon cancer. Nature 371: 75-80.
6. Prolla, T.A., et al. 1994. MLH1, Pms1, and Msh2 interactions during the initiation of DNA mismatch repair in yeast. Science 265: 1091-1092.
7. Palombo, F., et al. 1995. GTBP, a 160 kDa protein essential for mismatch-binding activity in human cells. Science 268: 1912-1914.
8. Shiwaku, H.O., et al. 1997. Alternative splicing of GTBP in normal human tissues. DNA Res. 4: 359-362.
9. Ercoli, A., et al. 1999. hMSH2 and GTBP expression in advanced stage epithelial ovarian cancer. Br. J. Cancer 80: 1665-1671.

CHROMOSOMAL LOCATION

Genetic locus: MSH6 (human) mapping to 2p16.3.

SOURCE

GTBP (F-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 63-97 near the N-terminus of GTBP of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 lambda light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-271979 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

GTBP (F-1) is recommended for detection of GTBP of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for GTBP siRNA (h): sc-35528, GTBP shRNA Plasmid (h): sc-35528-SH and GTBP shRNA (h) Lentiviral Particles: sc-35528-V.

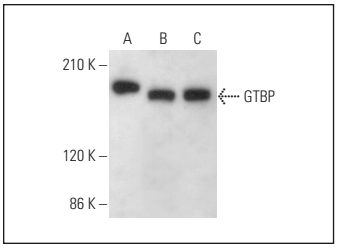
Molecular Weight of GTBP: 160 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, K-562 whole cell lysate: sc-2203 or SW480 cell lysate: sc-2219.

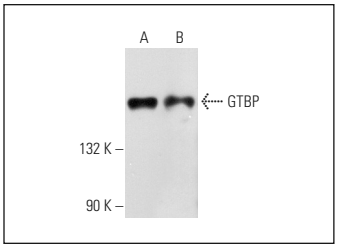
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGλ BP-HRP: sc-516132 or m-IgGλ BP-HRP (Cruz Marker): sc-516132-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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGλ BP-FITC: sc-516185 or m-IgGλ BP-PE: sc-516186 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



GTBP (F-1): sc-271979. Western blot analysis of GTBP expression in K-562 (**A**), SW480 (**B**) and 293T (**C**) whole cell lysates.



GTBP (F-1): sc-271979. Western blot analysis of GTBP expression in HeLa (**A**) and A-431 (**B**) nuclear extracts.

SELECT PRODUCT CITATIONS

1. Yang, M., et al. 2022. KDM6B promotes PARthanatos via suppression of O^6-methylguanine DNA methyltransferase repair and sustained checkpoint response. Nucleic Acids Res. 50: 6313-6331.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

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