

MGMT (h): 293T Lysate: sc-159668

BACKGROUND

MGMT (O_6 -methylguanine-DNA methyltransferase) is transcriptionally activated in response to DNA damage and functions to repair mutagenic and cytotoxic O_6 -alkylguanine lesions caused by carcinogens or cytostatic drugs. MGMT induction by ionising radiation does not occur in p53-deficient mice, suggesting that MGMT induction may require p53. Similarly, MGMT mRNA and protein were shown to be inducible by ionising radiation, only in cell lines that express functional p53, and not in cell lines that do not express wild type p53. In contrast, high MGMT activity was associated with the presence of mutant p53, in a study of oral cancer cell lines. Similarly, MGMT activity was significantly lower in ovarian tumors with wildtype p53 than in tumors with mutant p53, supporting the view that wildtype p53 down-regulates the basal MGMT promoter.

REFERENCES

1. D'Incalci, M., et al. 1988. Importance of the DNA repair enzyme O_6 -alkylguanine alkyltransferase (AT) in cancer chemotherapy. *Cancer Treat. Rev.* 15: 279-292.
2. Pegg, A.E. 1990. Mammalian O_6 -alkylguanine-DNA alkyltransferase: regulation and importance in response to alkylating carcinogenic and therapeutic agents. *Cancer Res.* 50: 6119-6129.
3. Kaina, B., et al. 1993. Contribution of O_6 -alkylguanine and N-alkylpurines to the formation of sister chromatid exchanges, chromosomal aberrations, and gene mutations: new insights gained from studies of genetically engineered mammalian cell lines. *Environ. Mol. Mutagen.* 22: 283-292.
4. Rafferty, J.A., et al. 1996. Induction of murine O_6 -alkylguanine-DNA-alkyltransferase in response to ionising radiation is p53 gene dose dependent. *Oncogene* 12: 693-697.
5. Grombacher, T., et al. 1998. p53 is involved in regulation of the DNA repair gene O_6 -methylguanine-DNA methyltransferase (MGMT) by DNA damaging agents. *Oncogene* 17: 845-851.
6. Guo, W., et al. 1999. High O_6 -methylguanine methyl transferase activity is frequently found in human oral cancer cells with p53 inactivation. *Int. J. Oncol.* 15: 817-821.
7. Hengstler, J.G., et al. 1999. Activity of O_6 -methylguanine-DNA methyltransferase in relation to p53 status and therapeutic response in ovarian cancer. *Int. J. Cancer* 84: 388-395.

CHROMOSOMAL LOCATION

Genetic locus: MGMT (human) mapping to 10q26.3.

PRODUCT

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

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.

APPLICATIONS

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

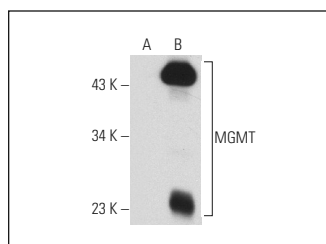
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

MGMT (D-4): sc-166527 is recommended as a positive control antibody for Western Blot analysis of enhanced human MGMT expression in MGMT transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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.

DATA



MGMT (D-4): sc-166527. Western blot analysis of MGMT expression in non-transfected: sc-117752 (A) and human MGMT transfected: sc-159668 (B) 293T whole cell lysates.

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.