SANTA CRUZ BIOTECHNOLOGY, INC.

MGMT (M-15): sc-8827

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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, in a study of oral cancer cell lines, high MGMT activity was associated with the presence of mutant p53. Similarly, MGMT activity was significantly lower in ovarian tumors with wild-type p53 than in tumors with mutant p53, supporting the view that wild type p53 down-regulates the basal MGMT promoter.

REFERENCES

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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 (mouse) mapping to 7 F4.

SOURCE

MGMT (M-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of MGMT of mouse origin.

STORAGE

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

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-8827 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MGMT (M-15) is recommended for detection of MGMT of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 MGMT siRNA (m): sc-35928, MGMT shRNA Plasmid (m): sc-35928-SH and MGMT shRNA (m) Lentiviral Particles: sc-35928-V.

Molecular Weight of unmodified MGMT: 26 kDa.

Molecular Weight of ubiquitinated MGMT: 50 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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

PROTOCOLS

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