

# MGMT (MT5.1): sc-33674

## 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 ionizing 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 ionizing radiation only in cell lines that express functional p53, and not in cell lines that do not express wildtype 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 downregulates the basal MGMT promoter.

## REFERENCES

1. D'Incalci, M., et al 1988. Importance of the DNA repair enzyme  $O^6$ -alkyl guanine 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

MGMT (MT5.1) is a mouse monoclonal antibody raised against recombinant MGMT of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MGMT (MT5.1) is available conjugated to either phycoerythrin (sc-33674 PE) or fluorescein (sc-33674 FITC), 200  $\mu$ g/ml, for IF, IHC(P) and FCM.

## APPLICATIONS

MGMT (MT5.1) is recommended for detection of MGMT of human origin by Western Blotting (starting dilution 1:100, dilution range ), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for MGMT siRNA (h): sc-35927, MGMT shRNA Plasmid (h): sc-35927-SH and MGMT shRNA (h) Lentiviral Particles: sc-35927-V.

Molecular Weight of unmodified MGMT: 26 kDa.

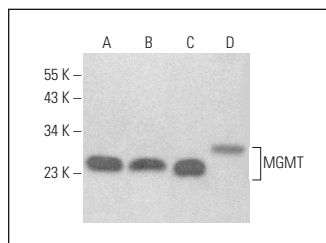
Molecular Weight of ubiquitinated MGMT: 50 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, Daudi cell lysate: sc-2415 or MOLT-4 cell lysate: sc-2233.

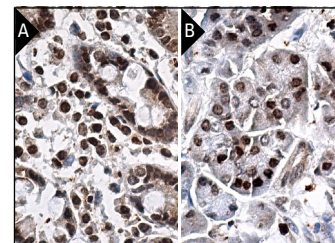
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



MGMT (MT5.1): sc-33674. Western blot analysis of MGMT expression in Caco-2 (A), Hep G2 (B), MOLT-4 (C) and Daudi (D) whole cell lysates.



MGMT (MT5.1): sc-33674. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing nuclear staining of glandular cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing nuclear staining of Islets of Langerhans and glandular cells (B).

## SELECT PRODUCT CITATIONS

1. Lorente, A., et al. 2009. RASSF1A, BLU, NORE1A, PTEN and MGMT expression and promoter methylation in gliomas and glioma cell lines and evidence of deregulated expression of *de novo* DNMTs. *Brain Pathol.* 19: 279-292.
2. Kim, S., et al. 2013. Lobarstin enhances chemosensitivity in human glioblastoma T98G cells. *Anticancer Res.* 33: 5445-5451.

## STORAGE

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

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

## CONJUGATES

See **MGMT (E-1): sc-166528** for MGMT antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.