SANTA CRUZ BIOTECHNOLOGY, INC.

MGMT (C-5): sc-271154

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.

CHROMOSOMAL LOCATION

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

SOURCE

MGMT (C-5) is a mouse monoclonal antibody raised against amino acids 1-207 representing full length MGMT of human origin.

PRODUCT

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

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.

APPLICATIONS

MGMT (C-5) is recommended for detection of MGMT 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), immunohistochemistry (including paraffin-embedded sections) (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 (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.

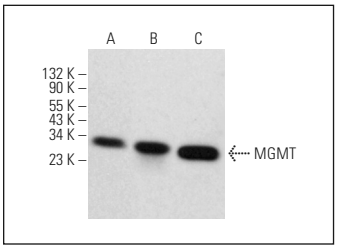
Molecular Weight of ubiquitinated MGMT: 50 kDa.

Positive Controls: MOLT-4 cell lysate: sc-2233, SUP-T1 whole cell lysate: sc-364796 or Jurkat whole cell lysate: sc-2204.

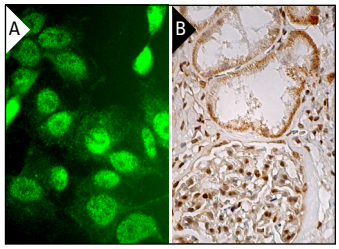
RECOMMENDED SUPPORT REAGENTS

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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ 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-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



MGMT (C-5): sc-271154. Western blot analysis of MGMT expression in Jurkat (**A**), MOLT-4 (**B**) and SUP-T1 (**C**) whole cell lysates.



MGMT (C-5): sc-271154. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear and cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing nuclear and cytoplasmic staining of cells in glomeruli and tubules (**B**).

SELECT PRODUCT CITATIONS

1. Zhang, N., et al. 2012. FoxM1 inhibition sensitizes resistant glioblastoma cells to temozolomide by downregulating the expression of DNA-repair gene Rad51. Clin. Cancer Res. 18: 5961-5971.
2. Trabelsi, S., et al. 2016. MGMT methylation assessment in glioblastoma: MS-MLPA versus human methylation 450K beadchip array and immunohistochemistry. Clin. Transl. Oncol. 18: 391-397.
3. Peng, W.X., et al. 2017. FoxM1-mediated RFC5 expression promotes temozolomide resistance. Cell Biol. Toxicol. 33: 527-537.
4. Wu, H., et al. 2020. Overexpression miR-486-3p promoted by allicin enhances temozolomide sensitivity in glioblastoma via targeting MGMT. Neuromolecular Med. 22: 359-369.

RESEARCH USE

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

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.