SANTA CRUZ BIOTECHNOLOGY, INC.

MGMT (MT 3.1): sc-56157

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 downregulates the basal MGMT promoter.

CHROMOSOMAL LOCATION

Genetic locus: MGMT (human) mapping to 10q26.3; Mgmt (mouse) mapping to 7 F4.

SOURCE

MGMT (MT 3.1) is a mouse monoclonal antibody raised against 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.

MGMT (MT 3.1) is available conjugated to agarose (sc-56157 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-56157 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-56157 PE), fluorescein (sc-56157 FITC), Alexa Fluor® 488 (sc-56157 AF488), Alexa Fluor® 546 (sc-56157 AF546), Alexa Fluor® 594 (sc-56157 AF594) or Alexa Fluor® 647 (sc-56157 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-56157 AF680) or Alexa Fluor® 790 (sc-56157 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

MGMT (MT 3.1) is recommended for detection of MGMT of human and, to a lesser extent, mouse and rat origin by Western Blotting (starting dilution 1:200, 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 flow cytometry (1 µg per 1 x 10^6 cells).

Suitable for use as control antibody for MGMT siRNA (h): sc-35927, MGMT siRNA (m): sc-35928, MGMT shRNA Plasmid (h): sc-35927-SH, MGMT shRNA Plasmid (m): sc-35928-SH, MGMT shRNA (h) Lentiviral Particles: sc-35927-V and MGMT shRNA (m) Lentiviral Particles: sc-35928-V.

Molecular Weight of unmodified MGMT: 26 kDa.

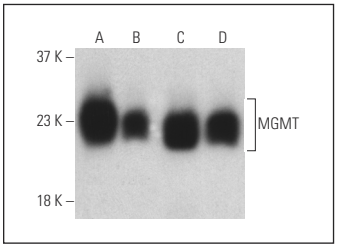
Molecular Weight of ubiquitinated MGMT: 50 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, Jurkat whole cell lysate: sc-2204 or Caco-2 cell lysate: sc-2262.

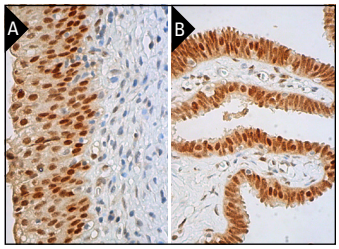
RECOMMENDED SUPPORT REAGENTS

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 (MT 3.1): sc-56157. Western blot analysis of MGMT expression in Caco-2 (**A**), MOLT-4 (**B**), MCF7 (**C**) and Jurkat (**D**) whole cell lysates. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



MGMT (MT 3.1): sc-56157. Immunoperoxidase staining of formalin fixed, paraffin-embedded human urinary bladder tissue showing nuclear staining of urothelial cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human fallopian tube tissue showing nuclear staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Shah, N., et al. 2011. Comprehensive analysis of MGMT promoter methylation: correlation with MGMT expression and clinical response in GBM. PLoS ONE 6: e16146.
2. Zampieri, L.X., et al. 2021. Olaparib is a mitochondrial complex I inhibitor that kills temozolomide-resistant human glioblastoma cells. Int. J. Mol. Sci. 22: 11938.
3. Kubitschek, J., et al. 2025. Single-nucleotide-resolution genomic maps of O6-methylguanine from the glioblastoma drug temozolomide. Nucleic Acids Res. 53: gkae1320.

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 for detailed protocols and support products.