Technical Data Sheet

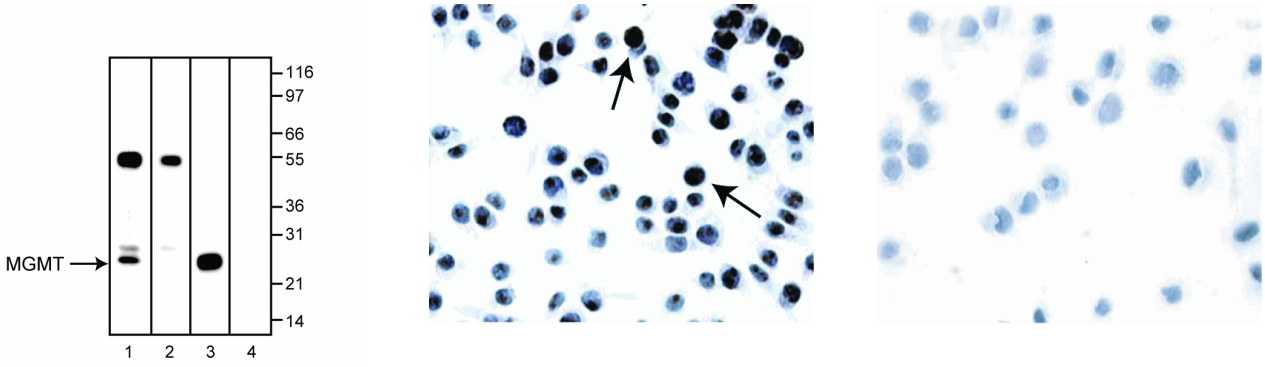
Purified Mouse Anti-Human MGMT

Product Information

Material Number:	**557045**
Alternate Name:	Methylguanine-DNA Methyltransferase
Size:	0.1 mg
Concentration:	0.5 mg/ml
Clone:	MT5.1
Isotype:	Mouse IgG1, κ
Reactivity:	QC Testing: Human
Target MW:	21-25 kDa
Storage Buffer:	Aqueous buffered solution containing protein stabilizer and ≤0.09% sodium azide.

Description

The repair of mismatched DNA is essential to maintaining the integrity of genetic information over time. The important role played by DNA repair enzymes is emphasized by the fact that they are highly conserved from bacteria to yeast to mammals. In bacteria, DNA repair involves the activity of repair enzymes including the MutL, MutH, and MutS proteins, as well as an enzyme originally identified in bacteria, and subsequently in all mammalian species, MGMT (methylguanine-DNA methyltransferase). Human MGMT is a 21 kDa protein which protects cells from the mutagenic effect of alkylating agents, which add a methyl group to the O6 position of guanine in DNA, producing O6-methylguanine. While MGMT is generally ubiquitously expressed in mammalian cells, the expression levels within cell and tissue types can be quite variable. Certain tumor cell types have been identified which express neither MGMT protein or mRNA, despite the apparent normal expression of the MGMT gene. The variable expression of MGMT may be a factor in the susceptibility of cells and tissues to the mutagenic effects of alkylating agents. It has been suggested that methylation of cytosine in the MGMT gene and promoter region may correlate with the expression of the MGMT gene product.



Immunoprecipitation (IP) and Western Blot analysis (WB) of MGMT in MOLT-4 cells (Left Panel). *MOLT-4 (Human T-lymphoblasts; ATCC CRL-1582) cell lysates were immunoprecipitated with the Mouse Anti-Human MGMT antibody (lane 1) or with an isotype control (lane 2). MGMT is identified as an ~25 kD band. The bands above the 25 kD MGMT band represent the heavy and light chains of the immunoprecipitating antibody. Western blot analysis of MGMT in MOLT-4 cell lysates probed with the Mouse Anti-Human MGMT antibody (lane 3) or an isotype control (lane 4).*
Immunocytochemistry for MGMT (Middle and Right Panels). *Cytospins of HeLa cells (Human cervical epitheloid carcinoma; ATCC CCL-2) were acetone-fixed and stained with the purified Mouse Anti-Human MGMT antibody (middle panel) or with an isotype control (right panel). MGMT staining is localized to the nucleus of the cells.*

Preparation and Storage

Store undiluted at 4°C.

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

Application Notes

Application

Western blot	Routinely Tested
Immunocytochemistry (cytospins)	Tested During Development
Immunoprecipitation	Tested During Development
Intracellular staining (flow cytometry)	Tested During Development

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Suggested Companion Products

Catalog Number	Name	Size	Clone
554002	HRP Goat Anti-Mouse Ig	1.0 ml	(none)

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
3. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
4. An isotype control should be used at the same concentration as the antibody of interest.

References

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Fornace AJ Jr, Papathanasiou MA, Hollander MC, Yarosh DB. Expression of the O6-methylguanine-DNA methyltransferase gene MGMT in MER+ and MER- human tumor cells. *Cancer Res.* 1990; 50(24):7908-7911. (Biology)

Gerson SL, Trey JE, Miller K, Berger NA. Comparison of O6-alkylguanine-DNA alkyltransferase activity based on cellular DNA content in human, rat and mouse tissues. *Carcinogenesis.* 1986; 7(5):745-749. (Biology)

von Wronski MA, Brent TP. Effect of 5-azacytidine on expression of the human DNA repair enzyme O6-methylguanine-DNA methyltransferase. *Carcinogenesis.* 1994; 15(4):577-582. (Biology)

Woodhead AD, Grist E, Carlson C, White TE, Waldstein E, Cao EH. Presence of O6-methylguanine acceptor protein in the tissues of different classes of vertebrates and invertebrates. *Comp Biochem Physiol B Biochem Mol Biol.* 1986; 85(1):125-130. (Biology)

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