Datasheet for ABIN967567

anti-MGMT antibody

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Overview

Quantity:	0.1 mg
Target:	MGMT
Reactivity:	Human
Host:	Mouse
Clonality:	Monoclonal
Conjugate:	This MGMT antibody is un-conjugated
Application:	Western Blotting (WB), Immunoprecipitation (IP), Intracellular Staining (ICS)

Product Details

Brand:	BD Pharmingen™
Clone:	MT5-1
Isotype:	IgG1 kappa
Characteristics:	1. Since applications vary, each investigator should titrate the reagent to obtain optimal results. 2. Please refer to us for technical protocols. 3. 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.
Purification:	The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

Target Details

Target:	MGMT
Alternative Name:	MGMT (MGMT Products)
Background:	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. MGMT is observed at 21 kDa on SDS-PAGE.
Molecular Weight:	21-25 kDa
Pathways:	DNA Damage Repair, Positive Regulation of Response to DNA Damage Stimulus

Application Details

Application Notes:	Applications include western blot analysis (0.5 to 4 µg/ml), immunoprecipitation (10 µg/ml), flow cytometry (0.06 to 1 µg/1 million cells) and immunohistochemical staining of acetone-fixed, frozen tissue cultured cells (40 µg/ml). Cells which are recommended as positive controls for detectable expression of MGMT include the following human cell lines: CEM lymphoblastic leukemia (ATCC CCL-119), MOLT-4 lymphoblastic leukemia (ATCC CRL 1582), A431 epidermoid carcinoma (ATCC CRL-1555), HeLa cervical carcinoma (ATCC CCL-2), Jurkat T cells (ATCC TIB-152) and Daudi Burkitt's lymphoma (ATCC CCL-213). Negative cell lines include 293 embryonic kidney (ATCC CRL-1673), K562 leukemia cells (ATCC CCL-243) HL-60 promyelocytic leukemia (ATCC CCL-240) and U-937 histiocytic leukemia (ATCC CRL-1593). In immunohistochemical staining, the MGMT protein is observed exclusively in the nucleus of the cells.
Restrictions:	For Research Use only

Handling

Format:	Liquid
Concentration:	0.5 mg/mL
Buffer:	Aqueous buffered solution containing protein stabilizer and ≤0.09 % sodium azide.
Preservative:	Sodium azide
Precaution of Use:	This product contains Sodium azide: a POISONOUS AND HAZARDOUS SUBSTANCE which should be handled by trained staff only.
Storage:	4 °C
Storage Comment:	Store undiluted at 4°C.

Publications

Product cited in:

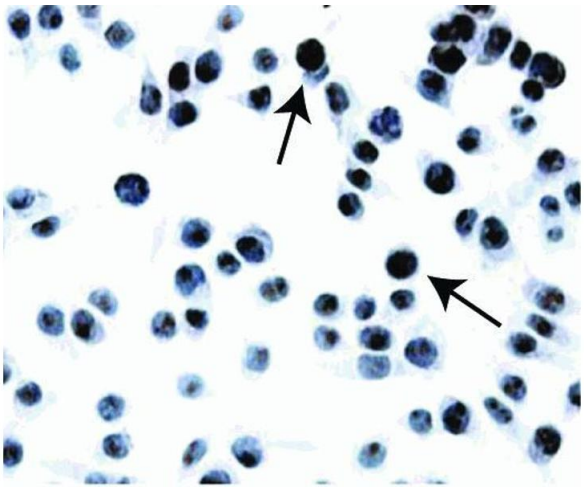
von Wronski, Brent: "Effect of 5-azacytidine on expression of the human DNA repair enzyme O6-methylguanine-DNA methyltransferase." in: **Carcinogenesis**, Vol. 15, Issue 4, pp. 577-82, (1994) (PubMed).

Ayi, Loh, Ali, Li: "Intracellular localization of human DNA repair enzyme methylguanine-DNA methyltransferase by antibodies and its importance." in: **Cancer research**, Vol. 52, Issue 23, pp. 6423-30, (1992) (PubMed).

Fornace, Papathanasiou, Hollander, Yarosh: "Expression of the O6-methylguanine-DNA methyltransferase gene MGMT in MER+ and MER- human tumor cells." in: **Cancer research**, Vol. 50, Issue 24, pp. 7908-11, (1991) (PubMed).

Woodhead, Grist, Carlson, White, Waldstein, Cao: "Presence of O6-methylguanine acceptor protein in the tissues of different classes of vertebrates and invertebrates." in: **Comparative biochemistry and physiology. B, Comparative biochemistry**, Vol. 85, Issue 1, pp. 125-30, (1986) (PubMed).

Gerson, Trey, Miller, Berger: "Comparison of O6-alkylguanine-DNA alkyltransferase activity based on cellular DNA content in human, rat and mouse tissues." in: **Carcinogenesis**, Vol. 7, Issue 5, pp. 745-9, (1986) (PubMed).



Immunohistochemistry

Image 1. Immunohistochemical staining of MGMT. Cytospins of HeLa human cervical carcinoma cells were acetone-fixed and stained with (first panel) anti-MGMT, clone MT5.1 (ABIN967567) or with an isotype control (second panel) MT5.1. Staining is localized to the nucleus of the cells.

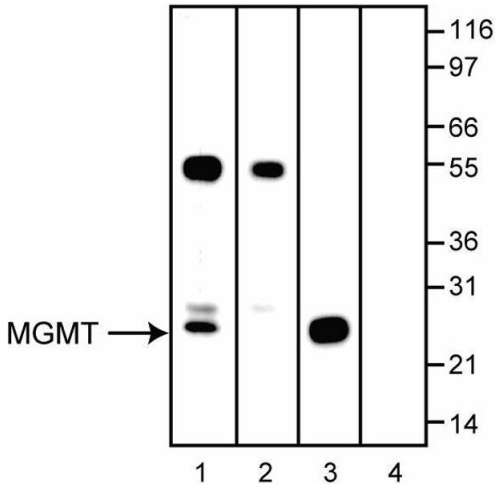
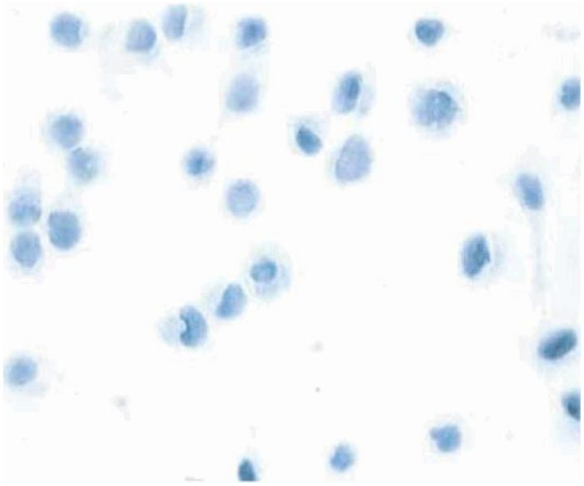


Image 2.



Immunohistochemistry

Image 3. Stained with an isotype control