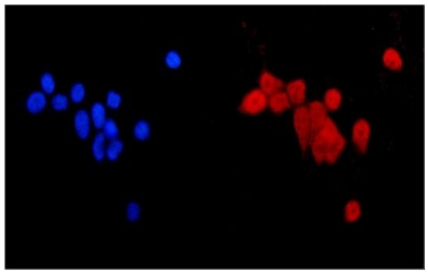
MGMT Polyclonal Antibody / O6-Alkylguanine DNA Alkyltransferase Antibody (R31679)

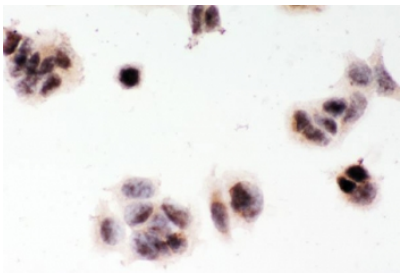
Catalog No.	Formulation	Size
R31679	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

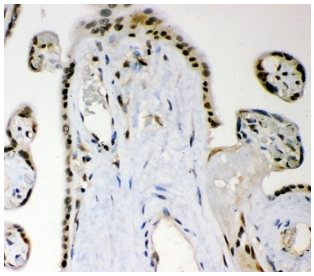
Species Reactivity	Human
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2.5% BSA and 0.025% sodium azide
Gene ID	4255
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 2-5ug/ml Immunocytochemistry: 1-2ug/ml Immunofluorescence (FFPE): 2-4ug/ml Flow cytometry: 1-3ug/million cells
Limitations	This MGMT Polyclonal Antibody / O6-Alkylguanine DNA Alkyltransferase Antibody is available for research use only.



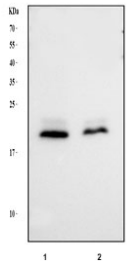
MGMT Polyclonal Antibody IF Staining of Human MCF-7 Cells. Immunofluorescence analysis of FFPE human MCF-7 cells using O6-Alkylguanine DNA Alkyltransferase Antibody (red), with DAPI nuclear counterstaining (blue). MGMT immunoreactivity is predominantly nuclear-associated, with variable staining intensity among cells. Heat-induced epitope retrieval was performed using pH 6 citrate buffer for 20 minutes.



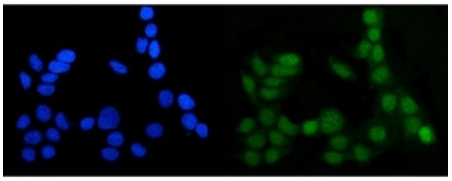
MGMT Polyclonal Antibody ICC Staining of Human MCF-7 Cells. Immunocytochemical analysis of FFPE human MCF-7 cells using O6-Alkylguanine DNA Alkyltransferase Antibody. Brown DAB immunoreactivity is predominantly nuclear, with variable staining intensity among the examined cells. Heat-induced epitope retrieval was performed using pH 6 citrate buffer for 20 minutes.



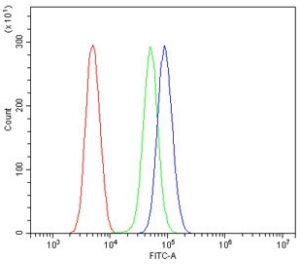
MGMT Polyclonal Antibody IHC Staining of Human Placenta Tissue. Immunohistochemical analysis of FFPE human placenta tissue using O6-Alkylguanine DNA Alkyltransferase Antibody. Scattered brown DAB-positive nuclei are observed within placental villous structures, with heterogeneous staining intensity among cells. Heat-induced epitope retrieval was performed using pH 6 citrate buffer for 20 minutes.



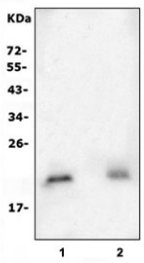
MGMT Polyclonal Antibody WB Analysis of Jurkat and MDA-MB-453 Cell Lysates. Western blot analysis of human Jurkat (lane 1) and MDA-MB-453 (lane 2) cell lysates using O6-Alkylguanine DNA Alkyltransferase Antibody. A distinct immunoreactive band is detected at approximately 23 kDa in both samples, consistent with the expected molecular weight of MGMT. The Jurkat lysate shows a slightly stronger signal under the tested conditions.



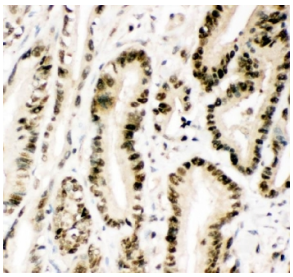
MGMT Polyclonal Antibody IF Staining of Human MCF-7 Cells. Immunofluorescence analysis of FFPE human MCF-7 cells using O6-Alkylguanine DNA Alkyltransferase Antibody (green), with DAPI nuclear counterstaining (blue). MGMT immunoreactivity is predominantly nuclear-associated, with variable fluorescence intensity across the cell population. Heat-induced epitope retrieval was performed using pH 6 citrate buffer for 20 minutes.



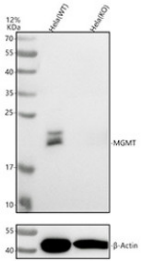
MGMT Polyclonal Antibody FACS Staining of Human THP-1 Cells. Flow cytometry analysis of human THP-1 cells using O6-Alkylguanine DNA Alkyltransferase Antibody at 1 ug per million cells following blocking with goat serum. The red histogram represents cells alone, the green histogram represents the isotype control, and the blue histogram represents MGMT antibody staining. A modest rightward fluorescence shift relative to the isotype control indicates detection of MGMT under the tested conditions.



MGMT Polyclonal Antibody WB Analysis of Caco-2 and Raji Cell Lysates. Western blot analysis of human Caco-2 (lane 1) and Raji (lane 2) cell lysates using O6-Alkylguanine DNA Alkyltransferase Antibody. Immunoreactive bands are detected at approximately 23 kDa in both samples, consistent with the expected molecular weight of MGMT. The Caco-2 lysate shows a slightly stronger signal under the tested conditions.



MGMT Polyclonal Antibody IHC Staining of Human Colorectal Cancer Tissue. Immunohistochemical analysis of FFPE human colorectal cancer tissue using O6-Alkylguanine DNA Alkyltransferase Antibody. Prominent brown DAB nuclear staining is observed in numerous tumor cells, particularly within glandular structures, with variable staining intensity across the section. Heat-induced epitope retrieval was performed using pH 8 EDTA buffer for 20 minutes.



MGMT Polyclonal Antibody WB Analysis of Human HeLa WT and MGMT KO Cells. Western blot analysis of wild-type (WT) HeLa cell lysate (lane 1) and MGMT knockout (KO) HeLa cell lysate (lane 2) using O6-Alkylguanine DNA Alkyltransferase Antibody. A distinct doublet is detected at approximately 21-23 kDa in WT cells, with both bands absent in MGMT KO cells, supporting antibody specificity. The observed molecular weights are consistent with the reported migration range of MGMT.

Description

MGMT Polyclonal Antibody / O6-Alkylguanine DNA Alkyltransferase Antibody recognizes MGMT, a DNA repair enzyme responsible for protecting genomic integrity against alkylation-induced damage. Also known as O6-methylguanine DNA methyltransferase or AGT, MGMT removes alkyl groups from the O6 position of guanine, restoring the original DNA base without excision or replacement. The repair reaction transfers the damaging alkyl group to a conserved cysteine residue within the enzyme, permanently inactivating the protein. Because each MGMT molecule performs only one repair reaction, cellular repair capacity depends on the availability of functional enzyme and its replenishment through protein synthesis.

MGMT protects cells against mutagenic lesions generated by endogenous metabolic processes, environmental alkylating agents, and certain chemotherapy drugs. Unrepaired O6-methylguanine can mispair with thymine during DNA replication, triggering mismatch repair responses that may lead to cell cycle arrest, apoptosis, or genomic instability. By removing these lesions before replication, MGMT reduces mutation accumulation and helps preserve normal cellular function. Differences in MGMT abundance can therefore influence susceptibility to DNA damage and the effectiveness of alkylating treatments.

Regulation of MGMT expression involves transcriptional control, epigenetic modification, and protein turnover. Promoter methylation can suppress MGMT transcription, while other regulatory mechanisms influence protein abundance independently of promoter status. These factors contribute to substantial variation in MGMT expression among normal tissues and tumors. In cancer research, MGMT protein levels are particularly relevant to resistance against temozolomide and related alkylating agents. However, protein expression does not always correspond directly with promoter methylation, emphasizing the importance of examining both molecular and epigenetic characteristics.

MGMT is primarily associated with the nucleus, where it protects DNA from alkylation damage, although its abundance and distribution can vary with cellular conditions. MGMT Polyclonal Antibody supports investigations of protein expression, tissue distribution, and cellular DNA repair capacity. Understanding these properties contributes to research on genome maintenance, carcinogenesis, and mechanisms underlying resistance to DNA-damaging therapies.

For studies requiring a monoclonal reagent with knockout-validated western blot specificity, see our MGMT Antibody IDD-13.

Application Notes

The stated application concentrations are suggested starting amounts. Titration of the MGMT Polyclonal Antibody / O6-Alkylguanine DNA Alkyltransferase Antibody may be required due to differences in protocols and secondary/substrate

sensitivity.

Immunogen

Human partial recombinant protein (AA 2-207) was used as the immunogen for this MGMT Polyclonal Antibody.

Storage

After reconstitution, the MGMT Polyclonal Antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

O6-alkylguanine DNA alkyltransferase antibody, O6-methylguanine DNA methyltransferase antibody, methylated-DNA protein-cysteine methyltransferase antibody, AGT antibody, AGAT antibody, DNA repair methyltransferase antibody

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