

Patient ID 321	Patient Name IMPLEMENTATION, TEST T	Birth Date 1973-05-01	Sex F	Age 52
Order Number X100498819	Client Order Number X100498819	Ordering Physician UNKNOWN, PROVIDER	Report Notes	
Account Information C7028846 DLMP Rochester		Collected 12 May 2025 11:00		

MGMT Promoter Methylation Analysis

Result Summary

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POSITIVE

Result

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Provided diagnosis: brain glioblastoma

POSITIVE for increased levels of MGMT promoter methylation ("MGMT promoter METHYLATED")

Interpretation

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The PRESENCE of increased levels of MGMT promoter methylation is a favorable prognostic biomarker and a predictive biomarker for response to alkylating chemotherapy in patients with newly diagnosed glioblastoma, IDH-wildtype (PMID:15758010, 22877848, 22578793).

Additional studies are needed to assess the clinical significance of MGMT promoter methylation status in other CNS tumor types and organ system tumors.

Additional Information

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CLINICAL TRIALS

Possible clinical trials of benefit for this patient can be found at the following sites:

- 1) ClinicalTrials.gov:
www.clinicaltrials.gov/ct2/search/advanced
- 2) Mayo Clinic: www.mayo.edu/research/clinical-trials/
- 3) National Cancer Institute: www.cancer.gov/clinicaltrials/search

Specimen

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Tissue, Tumor

Tissue ID

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Testing6938284

Method

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Microscopic examination was performed by a pathologist to identify areas for enrichment by macrodissection.

DNA was isolated, bisulfite converted and evaluated for the presence of increased levels of methylation in the promoter region of the MGMT gene using droplet digital PCR analysis.

Disclaimer

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Test results should be interpreted in the context of clinical findings, family history, and other laboratory data. If results obtained do not match other clinical or laboratory findings, please contact the laboratory. Misinterpretation of results may occur if the information provided is inaccurate or incomplete.

Rare polymorphisms exist that could lead to false-negative or false-positive results.

This test evaluates for the presence of increased levels of methylation of downstream CpG sites 75–80 and 84–87. Analytical validation studies showed that this assay requires at least 25 methylated copies for a positive result. Retrospective clinical validation study of approximately 200 patients with integrated diagnosis of glioblastoma, IDH-wildtype with grade 4 histological features who were treated with standard of care regimen including temozolomide established the cutoff of 6.50% fraction abundance to distinguish two groups of patients with statistically different overall survival rates. Using the combined cutoff of at least 25 methylated copies and 6.50% fraction abundance to define positive for increased promoter methylation ("methylated") status, patients with tumors positive for increased MGMT promoter methylation ("methylated") status have shown improved survival when compared to patients with tumors negative for increased MGMT promoter methylation ("unmethylated") status.

Negative results do not exclude the possibility that increased levels of methylation may be present but below the cut-offs for this assay due to low tumor purity. This assay requires at least 20% tumor.

Performing Site Legend

Code	Laboratory	Address	Lab Director	CLIA Certificate
MCR	Mayo Clinic Laboratories - Rochester Main Campus	200 First Street SW, Rochester, MN 55905	Nikola Baumann Ph.D.	24D0404292



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Negative results do not exclude the presence of increased levels of methylation in other CpG sites.

Released By

MCR

Cristiane M. Ida, M.D.

Received: 15 May 2025 14:43

Reported: 16 May 2025 09:32

Laboratory Notes

- 1

This test was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. This test has not been cleared or approved by the U.S. Food and Drug Administration.

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