MAYO CLINIC LABORATORIES

1-800-533-1710

MTNON

Neuro-Oncology Genome-Wide Methylation Array Analysis, Tumor

Patient ID	Patient Name		Birth Date	Sex	Age
SA00179912	IMPLEMENTATION, TEST T		2001-05-01	F	24
Order Number	**Client Order Number**	**Ordering Physician**	**Report Notes**		
SA00179912	SA00179912	CLIENT,CLIENT			
Account Information		**Collected**			
C7028846 DLMP Rochester		17 Apr 2026 00:00			

Neuro-Onc Methylation Array, Tumor

Result

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Provided diagnosis: glioma

NCI/BETHESDA CLASSIFIER v.2.0
Summary: Family NO MATCH/Class NO MATCH

Family Classification: NO MATCH

Class Classification: NO MATCH

Nearest-neighbors assisted unsupervised analysis (NN Method)
NON-CONTRIBUTORY

MGMT Promoter Methylation
Predicted Status: UNMETHYLATED
Score: 0.011
Confidence Interval: 0.001–0.091
Cutoff: 0.358

Interpretation

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This result should be correlated with histopathological and clinico-radiological findings and other available genetic test results.

NCI/BETHESDA CLASSIFIER v.2.0
The classifier had a NO MATCH result for methylation family and methylation class, indicating that the methylation profile of this specimen aligned with insufficient confidence (calibrated score <0.900 for family) to the reference dataset at the family and class levels.

Nearest-neighbors assisted unsupervised analysis (NN Method)
The NN Method is considered NON-CONTRIBUTORY because the classifier result was NO MATCH for methylation class. This method lacks robustness to be used stand-alone when the classifier has a NO MATCH methylation class result.

The NN Method identifies the five "neighbors" to the test sample and provides an objective and quantitative estimation of the test sample methylation class cluster rather than relying on subjective visualization by Uniform Manifold Approximation and Projection (UMAP). The NN Method is complementary to the classifier and interpreted in the context of the classifier methylation class results.

MGMT Promoter Methylation
The MGMT promoter methylation predicted status is UNMETHYLATED, which is an unfavorable prognostic biomarker and a predictive biomarker for lack of response to alkylating chemotherapy in patients with newly diagnosed glioblastoma, IDH-wildtype [PMID:15758010, PMID:22810491, PMID:22877848, PMID:22578793, PMID:28296618].

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

Discordant MGMT methylation results may occur due to different testing methodologies and/or evaluation of different CpG sites.

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

MCR

Tissue, Tumor

Tissue ID

MCR

12345

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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Method

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This assay uses the Illumina Infinium MethylationEPIC v2.0 kit, and data are analyzed using the proprietary NIH-developed NCI/Bethesda central nervous system tumor classifier v2.0, an in-house nearest-neighbors assisted unsupervised analysis (NN Method), and the MGMT promoter methylation mgmtstp27 R package.

Disclaimer

1 MCR

Test results should be interpreted in the context of clinical, tumor sampling, histopathological, and other laboratory data. If results obtained do not match other clinical or laboratory findings, contact the laboratory for discussion.

Abnormal methylation patterns sufficiently distinct from the reference dataset patterns can impact the ability of the classifier to provide high confidence results.

Discordant methylation profiling results may be obtained using different classifiers and different classifier versions.

The NN Method is complementary to the classifier and the results are not to be used as a stand-alone method.

Performance Characteristics: Validation studies demonstrated that overall concordance of results between samples tested by this assay and those tested at NIH were 88.7% (55/62 samples), with 91.9% (57/62) Family/Class classifier concordance, 98.4% (61/62) NN Method concordance, and 98.4% (61/62) MGMT Promoter Methylation concordance.

This assay has three reportable results:

1) NCI/BETHESDA CLASSIFIER v.2.0 generates tumor classification at methylation family and methylation class levels, and is reported as follows:

Family MATCHED/Class MATCHED: methylation family calibrated score ≥0.900 and methylation class calibrated score ≥0.900

Family MATCHED/Class SUGGESTED: methylation family calibrated score ≥0.900 and methylation class calibrated score 0.840–0.899

Family MATCHED/Class NO MATCH: methylation family calibrated score ≥0.900 and methylation class calibrated score <0.840

Family NO MATCH/Class NO MATCH: methylation family calibrated score <0.900 and methylation class calibrated score of any value

2) NN Method generates an NN Method class that is compared to NCI/BETHESDA CLASSIFIER v.2.0 methylation class results, and is reported as follows:

SUPPORTIVE: NN Method class and NCI/BETHESDA CLASSIFIER v.2.0 methylation class results are concordant

NON-CONTRIBUTORY: NN Method class and NCI/BETHESDA CLASSIFIER v.2.0 methylation class results are discordant or NCI/BETHESDA CLASSIFIER v.2.0 methylation class result is NO MATCH, and/or NN Method class did not reach a consensus class among at least three of the five closest reference dataset samples ("neighbors")

3) MGMT promoter methylation testing is reported as follows:

METHYLATED: score ≥0.358

UNMETHYLATED: score <0.358

Reliable results are dependent on adequate specimen collection and processing. This test has been validated on formalin-fixed, paraffin-embedded tissues; other fixatives are discouraged. Improper treatment of tissues, such as decalcification, may cause polymerase chain reaction failure. This assay requires at least 60% tumor and 75 ng DNA input.

Released By

MCR

Cristiane M. Ida, M.D.

Received: 17 Apr 2026 08:04 **Reported:** 17 Apr 2026 09:14

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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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