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DNA TEST REPORT

Full Name	**G.M Malith Mahendra**	Order ID/Sample ID	**1496702/9497262**
Date of Birth / Age	**39 Years**	Gender	**Male**
Parental Sample ID	**NA**	Sample Type	**FFPE**
Referring Clinician	**Dr. Mahilal Wijekoon** **Aegle Omics Private Limited (Colombo)**	Block No & Tumor content	**GJ-5572 C/70%**
		Date & time of Sample Receipt	**27-10-2025, 15:05:00**
		Date & time of Report	**06-11-2025, 11:16:12**
Collection Center/ Partner Lab			
Test Requested	**MGMT gene methylation analysis (Temozolomide Resistance) [MGM207]**		

CLINICAL DIAGNOSIS / SYMPTOMS / HISTORY

Astrocytoma

SCOPE

This assay screens for the promoter methylation status of MGMT gene by real-time PCR technology

RESULTS

This tumor sample [Block ID: GJ-5572 C)] is POSITIVE for *MGMT* promoter methylation

Assay Information	
Analysis for : **MGMT gene methylation analysis (Temozolomide resistance) [MGM207]**	Method : **Real Time PCR**
Gene : **O6-methylguanine-DNA methyltransferase (MGMT) Promoter region**	Endogenous Control : **Beta actin (ACTB)**
Result Summary	
MGMT Promoter methylation Status	
Positive	

RESULT AND INTERPRETATION

Amplification was observed in *MGMT* promoter region for this sample by qRT-PCR, indicating that the promoter region is methylated (within the detection limits of real time PCR). Epigenetic silencing of the *MGMT* (O6-methylguanine–DNA methyl transferase) gene by promoter methylation has been associated with longer overall survival in patients with glioblastoma (WHO), in addition to radiotherapy, received alkylating chemotherapy with carmustine or temozolomide [1,2].

TEST INFORMATION

Glioblastoma is the most common and most aggressive malignant primary brain tumor. While occurring in only two to three cases per 100,000 people in Europe and North America, glioblastoma represents 52% of all functional tissue brain tumor cases and 20% of all intracranial tumors. Prognosis for those diagnosed with glioblastoma is poor, with a median survival time of about 14 months. Patients with glioblastoma can be treated with alkylating agents such as Temador (temozolomide). Epigenetic silencing of the MGMT (O6-methylguanine-DNA methyltransferase) DNA-repair gene by promoter methylation compromises DNA repair and has been associated with longer survival in patients with glioblastoma who receive temozolomide. Determination of promoter methylation of the MGMT gene is being included as a relevant factor of the patient molecular profile.

METHODOLOGY

DNA extracted from FFPE tissue tumor samples was subjected to bisulphite treatment and the bisulphite-modified DNA was used as template for fluorescence-based real time qualitative Methylation-Specific PCR (qMSP). Fluorescence signal will be emitted only when specific primer-probe set detect the methylation region on bisulphite converted DNA. An additional amplification of the ACTB gene is performed as a reference.

DISCLAIMER

- The results of this test are dependent on the tumor content in the tissue sample provided.
- This is not a medical report. It has laboratory test findings that need to be correlated with clinical symptoms and discussed with the referring clinician for any further management.

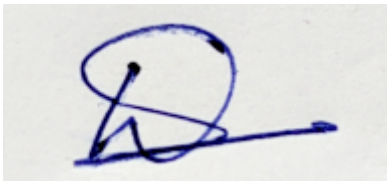
APPENDIX

Table 1: Ct values used for the calculation of the level of methylation of sample and control, showing amplification status of *MGMT* and *ACTB* genes

Sl. No.	Sample	Gene	Ct value
1	Sample (9497262)	MGMT	28.239
		ACTB	29.262
2	Control (100% methylated DNA)	MGMT	21.980
		ACTB	22.598
3	Unmethylated Control	MGMT	Undetermined
		ACTB	27.916

REFERENCES

1. Hegi ME, Diserens AC, Gorlia T, Hamou MF, de Tribolet N, Weller M, Kros JM, Hainfellner JA, Mason W, Mariani L, Bromberg JE, Hau P, Mirimanoff RO, Cairncross JG, Janzer RC, Stupp R. MGMT gene silencing and benefit from temozolomide in glioblastoma. N Engl J Med. 2005 Mar 10;352(10):997-1003.
2. Rivera AL1, Pelloski CE, Gilbert MR, Colman H, De La Cruz C, Sulman EP, Bekele BN, Aldape KD. MGMT promoter methylation is predictive of response to radiotherapy and prognostic in the absence of adjuvant alkylating chemotherapy for glioblastoma.Neuro Oncol. 2010 Feb;12(2):116-21. doi: 10.1093/neuonc/nop020. Epub 2009 Dec 14.



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