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DNA TEST REPORT (REVISED REPORT)

Full Name	**A.S Jayalath Silva**	Order ID/Sample ID	**1062395/8724928**
Age/Gender	**44 Years/Male**	Sample Type	**FFPE**
Referring Clinician	**Dr. T. Skandarajah** **Aegle Omics Private Limited (Colombo)**	Block No & Tumor content	**RD816/H/24 / 85%**
		Date & time of Sample Receipt	**25-09-2024, 16:15:00**
		Date & time of Report	**11-10-2024, 17:59:18**
Collection Center/ Partner Lab			
Test Requested	**EGFR gene analysis (Hot Spot) - 4 exons (18, 19, 20, 21) [MGM190]**		

CLINICAL DIAGNOSIS / SYMPTOMS / HISTORY

Left side parietal pleural biopsy - Metastatic Adenocarcinoma of lung

RESULTS

Exon 19 deletion mutation is detected in the *EGFR* gene

NOTE : T790M mutation is not detected in Exon 20 of the EGFR gene.

CLINICAL CORRELATION AND INTERPRETATION

Exon 19 deletion mutation of the *EGFR* gene is detected. This mutation is associated with increased sensitivity and treatment benefit from *EGFR* tyrosine kinase inhibitor (*EGFR*-TKI) therapy.

TEST DETAILS

Epidermal Growth Factor Receptor (EGFR) is a cellular transmembrane receptor protein. The activation of EGFR plays an important role in cellular tumor growth proliferation and metastasis spread. EGFR tyrosine kinase (TK) gene mutations have been identified in non-small cell lung cancer (NSCLC) patients. NSCLC patients with EGFR mutation are known to respond to TK inhibitor therapy (eg: Gefitinib (Iressa) or Erlotinib (Tarceva)). Also, during the course of treatment, some patients develop T790M or C797S resistance mutations in EGFR kinase domain and no longer respond to TK inhibitors. The scope of this test is to screen for 32 somatic mutations in the kinase domain (Exons – 18, 19, 20, 21) of EGFR gene by ARMS real-time PCR technology. It includes the good responder, poor responder and the resistance mutations T790M and C797S in Exon 20 for EGFR TKIs.

METHODOLOGY

DNA extracted from the sample is tested for the presence of indicated hotspot mutations (Exon 19 deletion/insertion, Exon 20 insertions and substitution mutations G719X, S768I, T790M, C797S, L858R and L861Q in Exons 18, 20 and 21 of the EGFR gene) using ARMS real-time PCR. The target exons are amplified with mutation specific primers. Mutations are reported according to HGVS guidelines for mutation nomenclature (www.hgvs.org) and according to the reference sequence NM_005228.3.

LIMITATIONS

This test is performed using a CE, IVD marked commercial kit. However, there may be limitations imposed by the sensitivity and the specificity of the assay and should be interpreted in conjunction with clinical presentation and other related investigations. Results of the test could be affected by contamination during specimen collection, inappropriate specimen storage and transport.

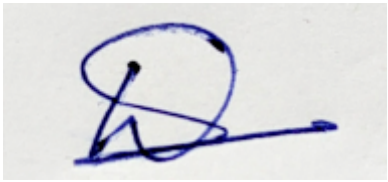
DISCLAIMER

The analytical sensitivity of the test allows detection of the mutation when the mutant clone comprises at least 1% of the total genomic DNA. Real-time PCR is a highly sensitive technique; reasons for apparently contradictory results may be due to improper quality control during sample collection and fixation, intrinsic heterogeneity of the sample, tumor depletion, high degree of necrosis, mucin content and/or presence of PCR inhibitors.

REFERENCES

1. Pao, W. and Miller, V.A. (2005) Epidermal growth factor receptor mutations, small molecule kinase inhibitors, and non-small-cell lung cancer: current knowledge and future directions. J. Clin. Oncol. 23, 2556.
2. Sequist, L.V., et al. (2008) First-line gefitinib in patients with advanced non-small cell lung cancer harboring8 somatic EGFR mutations. J. Clin. Oncol. 15, 2442.
3. Porta, R. et al. (2008) Erlotinib customization based on epidermal growth factor receptor (EGFR) mutations in stage IV non-small-cell lung cancer (NSCLC) patients (p). J. Clin. Oncol. 26(May 20 suppl), abstr 8038.

Note: The report has been revised by changing the Clinician name in the report. The report dated 28-09-2024 20:51:24 has been retracted and hence kindly use the revised report for future references.



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APPENDIX - LIST OF DETECTABLE MUTATIONS

No	Mutation	Nucleotide Change Detection	Remarks
1	EGFR G719X	G719S (2155G>A)	It detects 3 mutations but does not distinguish between them.
		G719C (2155G>T)	
		G719A (2156G>C)	
2	EGFR T790M	T790M (2369C>T)	
3	EGFR S768I	S768I (2303G>T)	
4	EGFR Exon 20 insertions	V769_D770insASV (2307_2308insGCCAGCGTG)	It detects 3 mutations but does not distinguish between them.
		D770_N771insG (2310_2311insGGT)	
		H773_V774insH (2319_2320insCAC)	
5	EGFR C797S	C797S (2390G>C)	It detects 2 mutations but does not distinguish between them.
		C797S (2389T>A)	
6	EGFR L858R	L858R (2573T>G)	
7	EGFR L861Q	L861Q (2582T>A)	
8	EGFR 19-Del (Deletion/Insertion)	E746_A750del(2235_2249del15	It detects 20 mutations but does not distinguish between them.
		E746_A750del(2236_2250del15)	
		L747_P753>S(2240_2257del18)	
		L747_A750>P(2239_2248TTAAGAGAAG>C)	
		E746_S752>V (2237_2255>T)	
		L747_T751del (2240_2254del15)	
		L747_S752del (2239_2256del18)	
		E746_T751>A (2237_2251del15)	
		L747_T751del (2239_2253del15)	
		L747_T751>P (2239_2251>C)	
		L747_E749del (2239_2247del9)	
		E746_E749del (2235_2246del12)	
		L747_P753>Q (2239_2258>CA)	
		L747_T751>S (2240_2251del12)	
		E746_S752>A (2237_2254del18)	
		L747_A750>P (2238_2248>GC)	
		E746_S752>D (2238_2255del18)	
		E746_T751>I(2235_2252>AAT)	
		L747_T751>Q(2238_2252>GCA)	
		E746_T751del (2236_2253del18)	