Patient ID	Patient Name		Birth Date	Sex	Age
SA00175001	TESTINGRNV, ABNORMAL		1955-03-29	F	69
Order Number	**Client Order Number**	**Ordering Physician**	**Report Notes**		
SA00175001	SA00175001	CLIENT,CLIENT			
Account Information		**Collected**			
C7028846 DLMP Rochester		28 Mar 2025 00:00			

MayoComplete Lung Rearrangements

Result

MCR

Provided diagnosis: lung adenocarcinoma

The following CLINICALLY RELEVANT VARIANT was detected:

ALK Fusion Detected

No other reportable rearrangements were detected within the analyzed regions of the tested genes listed in the method description.

This assay only evaluates fusions. Testing for MUTATIONS and SMALL INSERTIONS/DELETIONS was NOT PERFORMED. If
mutation testing is desired, consider MayoComplete Lung Cancer Mutations, Next-Generation Sequencing, Tumor (Mayo **Test ID:** MCLNM). Refer to mayocliniclabs.com or call 1–800–533–1710 for more information about specimen requirements for this test.

Interpretation

MCR

ALK encodes Anaplastic lymphoma kinase (Alk), a receptor tyrosine kinase that is part of the insulin receptor superfamily and induces downstream activation of pathways associated with cell survival, angiogenesis, and proliferation [PMID:21474455]. The ALK gene can become oncogenic by a gene rearrangement, copy number gain, or genetic mutation [PMID:21474455, PMID:22085494].

Clinically approved targeted therapy is available for patients with NSCLC whose tumors harbor an ALK gene fusion [fda.gov/drugs]. Thus, the finding of an ALK gene fusion within this tumor suggests that this patient may be eligible for and respond to targeted therapy.

Additional Information

MCR

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

13245

Method

MCR

Microscopic examination is performed by a pathologist to identify areas of tumor for enrichment by macrodissection. A qualitative PCR-based assay is performed to detect rearrangements (fusions) within the ALK, ROS1 and RET genes, MET exon 14 skipping, and expression imbalance for the ALK, ROS1, RET, NTRK1, NTRK2 and NTRK3 genes.

Variant nomenclature is based on build GRCh37 (hg19). For details about gene transcripts (RefSeq accession numbers), specific targeted regions of each gene, and additional information on this test, see www.mayocliniclabs.com (Test ID MCLNR).

Disclaimer

1 MCR

This test cannot differentiate between somatic and germline alterations. Additional testing may be necessary to clarify the significance of results if there is a potential hereditary risk.

Gene fusions (rearrangements) and expression imbalance involving the ALK, ROS1, RET, NTRK1, NTRK2, and NTRK3 genes only will be detected. This test does not detect point mutations, insertion/deletion mutations, large single or multiexon

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

Patient ID	Patient Name		Birth Date	Sex	Age
SA00175001	TESTINGRNV, ABNORMAL		1955-03-29	F	69
Order Number	**Client Order Number**	**Ordering Physician**	**Report Notes**		
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C7028846 DLMP Rochester		28 Mar 2025 00:00			

deletions or duplications, or genomic copy number variants in any of the genes tested.

A negative result does not rule out the presence of a rearrangement (fusion) that may be present but below the limits of detection of this assay.

Rare polymorphisms may be present that could lead to false-negative or false-positive results.

The presence or absence of a variant may not be predictive of response to therapy in all patients.

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. Misinterpretation of results may occur if the information provided is inaccurate and/or incomplete.

Reliable results are dependent on adequate specimen collection and processing. This test has been validated on cytology slides and formalin-fixed, paraffin-embedded tissues; other types of fixatives are discouraged. Improper treatment of tissues, such as decalcification, may cause PCR failure.

Released By MCR

Ying-Chun Lo, M.D., Ph.D.

Received: 29 Mar 2025 15:38 **Reported:** 09 Apr 2025 11:17

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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