MI PROFILE™
MOLECULAR INTELLIGENCE TUMOR REPORT

CARIS® LIFE SCIENCES

LIMITED TISSUE, FINAL REPORT

PATIENT

Name: Patient, Test
Date of Birth: XX-Mon-19XX
Sex: Male
Case Number: TN16-XXXXXX
Diagnosis: Non-small cell carcinoma

SPECIMEN INFORMATION

Primary Tumor Site: Lung, NOS
Specimen Site: Chest wall, NOS
Specimen ID: ABC-1234-XY
Specimen Collected: XX-Mon-2016
Testing Completed: XX-Mon-2016

ORDERED BY

Ordering Physician, MD
The Cancer Center
123 Main Street
Springfield, XY 12345
(123) 456-7890

Bold Therapies = On NCCN Compendium® Therapies

✔ THERAPIES WITH **POTENTIAL BENEFIT** (PAGE 3)

carboplatin, **cisplatin**	ERCC1	**nivolumab**, **pembrolizumab**	PD-L1★	oxaliplatin	ERCC1

★ **Indicates Clinical Trial Opportunity • 137 Targeted Therapy Trials** *(See Clinical Trials Connector™ on page 5 for details.)*

✘ THERAPIES WITH **POTENTIAL LACK OF BENEFIT** (PAGE 4)

afatinib	EGFR	**ceritinib**	ALK	**docetaxel**, **nab-paclitaxel**, **paclitaxel**	TUBB3
alectinib	ALK	**crizotinib**	ROS1, ALK	**erlotinib**, **gefitinib**	EGFR

? THERAPIES WITH **INDETERMINATE BENEFIT**

NONE

Therapies associated with potential benefit or lack of benefit, as indicated above, are based on biomarker results provided in this report and are based on published medical evidence. This evidence may have been obtained from studies performed in the cancer type present in the tested patient's sample or derived from another tumor type. The selection of any, all, or none of the matched therapies resides solely with the discretion of the treating physician. Decisions on patient care and treatment must be based on the independent medical judgment of the treating physician, taking into consideration all available information in addition to this report concerning the patient's condition in accordance with the applicable standard of care.

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SUMMARY OF RESULTS (SEE APPENDIX FOR FULL DETAILS)

Biomarker	Method	Result
ALK	IHC	Negative
EGFR	RFLP	Wild Type
EGFR T790M	RFLP	Absent
ERCC1	IHC	Negative
PD-L1	IHC	Positive
ROS1	FISH	Negative
TUBB3	IHC	Positive

FISH: Fluorescence *in situ* hybridization **IHC:** Immunohistochemistry **RFLP:** RFLP

See the Appendix section for a detailed overview of the biomarker test results for each technology.

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✔ THERAPIES WITH **POTENTIAL BENEFIT**

Therapies	Test	Method	Result	Value†	Clinical Association				
					Potential Benefit	Decreased Potential Benefit	Lack of Potential Benefit	Highest Level of Evidence*	Reference
carboplatin, cisplatin, oxaliplatin	ERCC1	IHC	Negative	1+ 20%	✔			I / Good	3#, 4#, 5#
nivolumab, pembrolizumab	PD-L1	IHC	Positive	1+ 50%	✔			I / Good	25#, 26, 27#

* The level of evidence for all references is assigned according to the Literature Level of Evidence Framework consistent with the US Preventive Services Task Force described further in the Appendix of this report. The data level of each biomarker-drug interaction is the highest level of evidence based on the body of evidence, overall clinical utility, competing biomarker interactions and tumor type from which the evidence was gathered.

Evidence reference includes data from the same lineage as the tested specimen.

†Refer to Appendix for detailed Result and Value information for each biomarker, including appropriate cutoffs, unit of measure, etc.

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✘ THERAPIES WITH **POTENTIAL LACK OF BENEFIT**

Therapies	Test	Method	Result	Value†	Clinical Association				
					Potential Benefit	Decreased Potential Benefit	Lack of Potential Benefit	Highest Level of Evidence*	Reference
afatinib	EGFR	RFLP	Wild Type				✔	I / Good	1#
	EGFR T790M	RFLP	Absent					I / Good	1#
alectinib	ALK	IHC	Negative	0+ 100%			✔	II-2 / Good	2#
ceritinib	ALK	IHC	Negative	0+ 100%			✔	II-1 / Good	6#
crizotinib	ALK	IHC	Negative	0+ 100%			✔	I / Good	10#
	ROS1	FISH	Negative				✔	III / Good	7#, 8#, 9#
docetaxel, nab-paclitaxel, paclitaxel	TUBB3	IHC	Positive	2+ 90%			✔	I / Good	11, 12#, 13#, 14#
erlotinib, gefitinib	EGFR	RFLP	Wild Type				✔	I / Good	17#, 18#, 19#, 20#
	EGFR T790M	RFLP	Absent					I / Good	21#, 22#, 23#, 24#

* The level of evidence for all references is assigned according to the Literature Level of Evidence Framework consistent with the US Preventive Services Task Force described further in the Appendix of this report. The data level of each biomarker-drug interaction is the highest level of evidence based on the body of evidence, overall clinical utility, competing biomarker interactions and tumor type from which the evidence was gathered.

Evidence reference includes data from the same lineage as the tested specimen.

†Refer to Appendix for detailed Result and Value information for each biomarker, including appropriate cutoffs, unit of measure, etc.

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CLINICAL TRIALS CONNECTOR™

For a complete list of open, enrolling clinical trials visit MI Portal to access the **Clinical Trials Connector** . This personalized, real-time web-based service provides additional clinical trial information and enhanced searching capabilities, including, but not limited to:

- Location: filter by geographic area
- Biomarker(s): identify specific biomarkers associated with open clinical trials to choose from
- Drug(s): search for specific therapies
- Trial Sponsor: locate trials based on the organization supporting the trial(s)

Visit www.CarisMolecularIntelligence.com to view all matched trials.

TARGETED THERAPY CLINICAL TRIALS (137)

Drug Class	Biomarker	Method	Investigational Agent(s)
Immunomodulatory agents (137)	PD-L1	IHC	MK-3475, MPDL3280A, atezolizumab, avelumab, nivolumab, pembrolizumab

( ) = represents the total number of clinical trials identified by the Clinical Trials Connector for the provided drug class or table.

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CLIA 03D1019490 • CAP 7195577 • ISO 15189:2012 - 3531.01 • Zoran Gatalica, MD, DSc, Medical Director •

REFERENCES

SOURCE	LEVEL OF EVIDENCE*
1. Sequist, L.V., M. Schuler, et al. (2013). "Phase III Study of Afatinib or Cisplatin Plus Pemetrexed in Patients with Metastatic Lung Adenocarcinoma With EGFR Mutations." J Clin Oncol ahead of print July 1, 2013, doi: 10.1200/JCO.2012.44.2806 View Citation Online	I / Good
2. Shaw AT, Gandhi L, Gadgeel S, Riely GJ, Cetnar J, West H, Camidge DR, Socinski MA, Chiappori A, Mekhail T, Chao BH, Borghaei H, Gold KA, Zeaiter A, Bordogna W, Balas B, Puig O, Henschel V, Ou SI; study investigators. Alectinib in ALK-positive, crizotinib-resistant, non-small-cell lung cancer: a single-group, multicentre, phase 2 trial. Lancet Oncol. 2015 Dec 18. pii: S1470-2045(15)00488-X. doi: 10.1016/S1470-2045(15)00488-X. View Citation Online	II-2 / Good
3. Roth JA, Carlson JJ. Prognostic role of ERCC1 in advanced non-small-cell lung cancer: a systematic review and meta-analysis. Clin Lung Cancer. 2011 Nov;12(6):393-401. View Citation Online	I / Good
4. Li Z, Qing Y, Guan W, Li M, Peng Y, Zhang S, Xiong Y, Wang D. Predictive value of APE1, BRCA1, ERCC1 and TUBB3 expression in patients with advanced non-small cell lung cancer (NSCLC) receiving first-line platinum-paclitaxel chemotherapy. Cancer Chemother Pharmacol. 2014 Oct;74(4):777-86. View Citation Online	II-3 / Good
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13. Zhang, H.-L., X.-W. Zhou, et al. (2012). "Association between class III β-tubulin expression and response to paclitaxel/vinorelbine-based chemotherapy for non-small cell lung cancer: A meta-analysis." Lung Cancer 77: 9-15. View Citation Online	I / Good
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17. Maemondo, M., T. Nukiwa, et. al. (2010). "Gefitinib or chemotherapy for non-small cell lung cancer with mutated EGFR." N. Engl. J. Med. 362:2380-8. View Citation Online	II-1 / Good

** See Appendix page 4 for Level of Evidence description.*

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REFERENCES

SOURCE	LEVEL OF EVIDENCE*
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** See Appendix page 4 for Level of Evidence description.*

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SPECIMEN INFORMATION

Specimen ID: ABC-123-XY

Specimen Collected: XX-Mon-2016

Specimen Received: XX-Mon-2016

Testing Initiated: XX-Mon-2016

Gross description: 1 (A) Paraffin Block - Client ID (ABC-1234-XY) 1 (B) Paraffin Block - Client ID (ABC-1234-XY) 1 (C) Paraffin Block - Client ID(ABC-1234-XY) from Reading Hospital, West Reading, PA, with the corresponding cytopathology report labeled "ABC-1234-XY".

Pathologic Diagnosis: Chest wall, right anterior core biopsy: Malignant cells present. Suggestive of poorly differentiated non-small cell carcinoma.

Disclaimer

All of the individual assays that are available through Caris Molecular Intelligence™ were developed and validated by Caris MPI, Inc. d/b/a Caris Life Sciences® and their test performance characteristics were determined and validated by Caris Life Sciences pursuant to the Clinical Laboratory Improvements Amendments and accompanying regulations ("CLIA"). Some of the assays that are part of Caris Molecular Intelligence have been approved by the U.S. Food and Drug Administration (FDA). For any remaining assays, Caris MPI, Inc. is certified under CLIA to perform high complexity testing, including all of the assays that comprise the Caris Molecular Intelligence.

The CLIA certification number of Caris MPI, Inc. laboratory performing testing in connection with Caris Molecular Intelligence can be found at the bottom of each page. This report includes information about therapies that appear to be associated with clinical benefit based on NCCN Compendium® guidelines, relevance of tumor lineage, level of published evidence and strength of biomarker results. This report, neither ranks biomarkers listed nor therapies associated with such biomarkers, in order of potential or predicted efficacy, and such therapies may or may not be suitable for administration to a particular patient. A determination of biomarker results do not necessarily indicate pharmacologic effectiveness or lack thereof. This report does not guarantee or suggest that any particular agent will be effective with the treatment of any particular condition. Caris Life Sciences expressly disclaims and makes no representation or warranty whatsoever relating, directly or indirectly, to review of identified scientific literature, the conclusions drawn from such review or any of the information set forth in this report that is derived from such review, including information and conclusions relating to therapies that are included or omitted from this report.

Decisions regarding care and treatment should not be based on a single test such as this test or the information contained in this report. The decision to select any, all or none of the listed therapies resides solely within the discretion of the treating physician. Decisions on patient care and treatment must be based on the independent medical judgment of the treating physician, taking into consideration all applicable information concerning the patient's condition, including but not limited to, patient and family history, physical examinations, information from other diagnostic tests, and patient preferences, in accordance with the applicable standard of care.

The information presented in the Clinical Trials Connector™ section of this report (if applicable) is compiled from sources believed to be reliable and current. We have used our best efforts to make this information as accurate as possible. However, the accuracy and completeness of this information cannot be guaranteed. The contents are to be used for clinical trial guidance and may not include all relevant trials. Current enrollment status for these trials is unknown. The clinical trials information present in the biomarker description was compiled from www.clinicaltrials.gov. The contents are to be used only as a guide, and health care providers should employ their judgment in interpreting this information for a particular patient. Specific eligibility criteria for each clinical trial should be reviewed as additional inclusion criteria may apply. Caris Life Sciences makes no promises or guarantees that a healthcare provider, insurer or other third party private or government payor, will provide reimbursement for any of the tests performed.

The next-generation sequencing assay performed by Caris Life Sciences examines nucleic acids obtained from tumor tissue only and does not examine normal tissue such as tumor adjacent tissue or whole or peripheral blood. As such, the origin of any mutation detected may be a somatic mutation (not inherited) or a germline mutation (inherited) and will not be distinguishable by this assay. It is recommended that results be considered within the patient's clinical and health history. If a germline inheritance pattern is suspected then counseling by a board certified genetic counselor is recommended.

Molecular testing of this specimen was performed after harvesting of targeted tissues with an approved manual microdissection technique. Candidate slides were examined under a microscope and areas containing tumor cells (and separately normal cells, when necessary for testing) were circled. A laboratory technician harvested targeted tissues for extraction from the marked areas using a dissection microscope. The areas marked and extracted were microscopically reexamined on post-microdissected slides and adequacy of microdissection was verified by a board certified Pathologist.

Electronic Signature

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For full biomarker assay results, including cutoffs, unit of measure, methods, etc., please visit MI Portal to access complete report details. Please contact Client Services at (888)979-8669 for questions or assistance.

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