

# EGFR EXON 20 INSERTION MUTATION TESTING IN METASTATIC NON-SMALL CELL LUNG CANCER (mNSCLC)

## EGFR exon 20 insertion mutations are distinct from classical EGFR mutations<sup>1</sup>

- EGFR exon 20 insertion mutations are the third most prevalent primary EGFR mutation<sup>1</sup>
- EGFR exon 20 insertion mutations are typically mutually exclusive of other genetic alterations that can drive NSCLC<sup>1</sup>

## NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®)<sup>2</sup>

The NCCN Guidelines® for NSCLC strongly advise broader molecular profiling in certain patients after diagnosis of advanced or metastatic NSCLC, with the goal of identifying rare driver mutations.<sup>2\*</sup>

- Broad molecular profiling is a key component of the improvement of care for certain patients with mNSCLC<sup>2</sup>
- It is recommended at this time that, when feasible, testing be performed via broad, panel-based approach, most typically by next-generation sequencing (NGS)<sup>2</sup>

While PCR-based tests are mutation-specific, NGS can detect a broad range of EGFR exon 20 insertion mutations<sup>3,4</sup>

	Next-generation sequencing (NGS)	Quantitative real-time polymerase chain reaction (qPCR)
Simultaneously screens dozens to hundreds of genes <sup>5,6</sup>	✓	✗
High resolution of genomic variants, generating broader data while requiring less DNA <sup>6</sup>	✓	✗
Improved mutation identification through comprehensive genomic coverage <sup>6</sup>	✓	✗

**Ensure your patients with mNSCLC receive comprehensive biomarker testing—  
See reverse side for a list of reference laboratories**

\*The NCCN Guidelines for NSCLC provide recommendations for certain individual biomarkers that should be tested, and recommend testing techniques, but do not endorse any specific commercially available biomarker assays or commercial laboratories.<sup>2</sup>  
EGFR, epidermal growth factor receptor.

**EGFR exon 20 insertion mutations can only be identified through careful assessment of an NGS report, as other genetic alterations that are not specific therapeutic targets appear later**<sup>4,7-10</sup>

**NGS testing to detect EGFR exon 20 mutations may be performed with either a tissue or plasma sample**<sup>8,11-19</sup>

- Testing is often covered by Medicare and many commercial payers for patients with advanced cancers

LIQUID BIOPSY test providers	TISSUE BIOPSY test providers
<p>Guardant Health Foundation Medicine LabCorp Oncology</p>	<p>Archer Caris Life Sciences Foundation Medicine LabCorp Oncology NeoGenomics PathGroup Quest Diagnostics Tempus</p>

This list is being provided for informational purposes only and is not meant to be medical advice. This list may not be complete and it is subject to change over time. Reader is responsible for ascertaining which company, service, and test are right for their purposes.

**REFERENCES:** **1.** Arcila ME. *Mol Cancer Ther.* 2013;12(2):220-229. **2.** Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Non-Small Cell Lung Cancer V.6.2021. © National Comprehensive Cancer Network, Inc. 2021. All rights reserved. Accessed September 30, 2021. To view the most recent and complete version of the guideline, go online to NCCN.org. NCCN makes no warranties of any kind whatsoever regarding their content, use or application and disclaims any responsibility for their application or use in any way. **3.** Riess JW. *J Thorac Oncol.* 2018;13(10):1560-1568. **4.** Oxnard GR. *J Thorac Oncol.* 2013;8(2):179-184. **5.** Caris Life Sciences. MI Profile. Accessed September 27, 2021. <https://www.carismolecularintelligence.com/wp-content/uploads/2017/03/Profile-Menu-Brochure.pdf> **6.** König K. *J Thorac Oncol.* 2015;10(7):1049-1057. **7.** Robichaux JP. *Nat Med.* 2018;24(5):638-646. **8.** Foundation Medicine. Accessed September 27, 2021. [https://assets.ctfassets.net/vhribv12lmne/4ZHUEfEiI8iOCK2Q6saGcU/671b313cb6bb85bfe861f83e31c9716d/FICDx\\_TechInfo\\_09-03.pdf](https://assets.ctfassets.net/vhribv12lmne/4ZHUEfEiI8iOCK2Q6saGcU/671b313cb6bb85bfe861f83e31c9716d/FICDx_TechInfo_09-03.pdf) **9.** Clinical Test Report: Oncomine™ Dx Target Test US. Thermo Fisher Scientific. Accessed September 27, 2021. <https://assets.thermofisher.com/TFS-Assets/LSG/brochures/oncomine-dx-target-test-sample-report.pdf> **10.** NSCLC EGFR and Elevated TMB Sample Report. Foundation Medicine. Accessed September 27, 2021. [https://assets.ctfassets.net/w98cd481qyp0/2pusoGEB1tZXWHYL3vIDnv/8392c7cfa1ebf36f9098c936324a73e3/FICDx\\_NSCLC\\_CDx\\_Elevated\\_TMB.pdf](https://assets.ctfassets.net/w98cd481qyp0/2pusoGEB1tZXWHYL3vIDnv/8392c7cfa1ebf36f9098c936324a73e3/FICDx_NSCLC_CDx_Elevated_TMB.pdf) **11.** Esagian SM. *J Cancer Res Clin Oncol.* 2020;146(8):2051-2066. **12.** Caris Life Sciences. January 28, 2013. Accessed September 27, 2021. <https://www.carislifesciences.com/about/news-and-media/caris-life-sciences-adds-next-generation-sequencing-to-enhance-evidence-based-tumor-profiling-service-for-cancer-patients/> **13.** Guardant Health, Inc. Accessed September 27, 2021. <https://guardanthealth.com/solutions/> **14.** Integrated Oncology. LabCorp Specialty Testing Group. Accessed September 27, 2021. <https://oncology.labcorp.com/tests/831177/omniseq-insight> **15.** Integrated Oncology. Resolution ctDx Lung™ Assay. Accessed September 27, 2021. <https://oncology.labcorp.com/cancer-care-team/test-menu/resolution-ctdx-lung-assay> **16.** NeoGenomics. NeoGenomics Laboratories, Inc. Accessed September 27, 2021. <https://neogenomics.com/pharma-services/lab-services/molecular/next-generation-sequencingservices> **17.** PathGroup. Test Update – SmartGenomics™ Complete & New Smart Genomics™ Cancer Specific Profiles. Accessed September 27, 2021. <http://www.pathgroup.com/wp-content/uploads/2016/11/NGS05-Test-UPdate.pdf> **18.** Quest Diagnostics™. Accessed September 27, 2021. <https://testdirectory.questdiagnostics.com/test/test-detail/93234/?cc=MASTER> **19.** Tempus. Tempus xT (v4) validation. Accessed September 27, 2021. [https://www.tempus.com/wp-content/uploads/2021/03/xTv4-Validation\\_030921.pdf](https://www.tempus.com/wp-content/uploads/2021/03/xTv4-Validation_030921.pdf) **20.** ArcherDX, Inc. FusionPlex® Lung. Accessed September 27, 2021. <https://archerdx.com/research-products/solid-tumor-research/fusionplex-lung/>