FGFR TEST NOW!

Test for FGFR Genetic Alterations:

A Source of Tumor Activation

Fibroblast growth factor receptors (FGFRs) are a family of receptors that promote gene expression related to cell proliferation, differentiation, migration, and angiogenesis.[1] FGFRs are important for normal cell growth such as wound healing. However, genetic alterations in FGFRs promote tumor growth and metastasis in several malignancies.[2] Testing for FGFR alterations can help identify a therapeutic approach.[3]

Test your appropriate patients for FGFR alterations

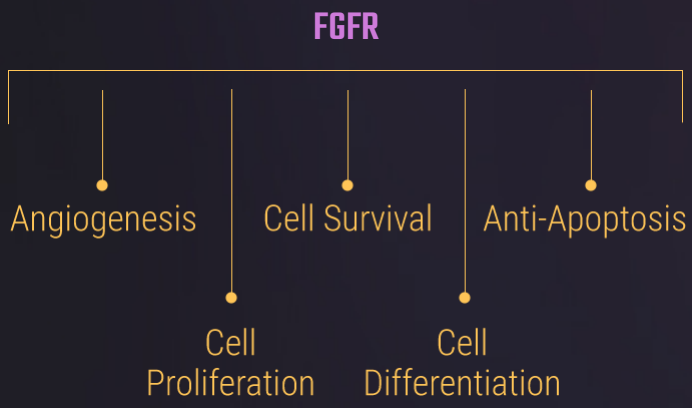
Genetically altered FGFR can activate several oncogenic processes

ABERRANT FGFR SIGNALING PLAYS A CRITICAL ROLE IN CERTAIN MALIGNANCIES[4,5]

- FGFRs are activated by the binding of extracellular fibroblast growth factors (FGFs)[4]
- Activated FGFR phosphorylates multiple signaling proteins[4]

Activation of an aberrant FGFR pathway, through ligand-dependent and ligand-independent mechanisms, has been implicated in pathogenesis of certain malignancies.[2]

ABERRANT FGFR SIGNALING IS RESPONSIBLE FOR SEVERAL KEY TUMORIGENIC PROCESSES[6]



FGFR genetic alterations are found in a variety of solid tumors

FGFRs include FGFR1, FGFR2, FGFR3, and FGFR4.[1] FGFR can be susceptible to genetic alterations.[2] Genetically altered FGFR plays a key role in the pathogenesis of certain solid tumors.[6]

FREQUENCY OF FGFR ALTERATIONS IN SOLID TUMORS

Cancer type[6]	Prevalence[6]
Urothelial	~32%
Breast	18%
Endometrial	~13%
Squamous cell lung	~13%
Ovarian	~9%
Carcinoma of unknown primary	~8%
Glioma	~8%
Cholangiocarcinoma	7%

Alterations in specific FGFR expression may be related to prognosis or sensitivity to cancer treatments.[6]

Genetically altered FGFR may play a critical role in certain tumors

FGFR alterations, in addition to other genetic alterations, can impact certain cancers, including those below. These are not the only cancers affected by altered FGFR.

Urothelial carcinoma

Urothelial carcinoma (UC) can harbor FGFR3 point mutations (when a single pair base is altered) and fusions (when parts of 2 different genes join) and FGFR2 fusions.[7-10] Patients with locally advanced or metastatic UC (mUC) have a poor prognosis.[11]

Breast cancer

Several types of FGFR genetic alterations have been found in breast cancer. They include FGFR1 amplifications, which are found in 8% to 15% of all breast cancers and are associated with a poor prognosis. FGFR2 and FGFR3 alterations have also been identified in breast cancer.[12]

Endometrial cancer

FGFR2 mutations have been identified in endometrial cancers. These mutations have been associated with reduced overall survival and disease-free survival in one study of early-stage endometrioid endometrial cancer.[13]

Squamous cell lung cancer

FGFR1 amplification has been found in squamous cell lung cancer (SCLC). This has been identified in up to 20% of SCLC tumor samples in 2 preclinical studies.[14]

Genetic testing for FGFR alterations

Your patients may have FGFR alterations and they may be actionable.

To find clinical trials for tumors with FGFR genetic alterations, go to ClinicalTrials.gov.

There are several types of genetic tests for FGFR alterations, including[15]:

PCR

Polymerase chain reaction (PCR) amplifies one or more copies of a DNA sequence to allow for detection and analysis of genetic mutations. PCR is performed using a tissue sample.

NGS

Next-generation sequencing (NGS) broadly detects DNA mutations, copy number variations, and gene fusions. NGS can be performed on a range of cancer types using solid tissue, blood, and bone marrow samples.

To see a list of companion diagnostics approved by the US FDA, visit www.fda.gov/companiondiagnostics.

FGFR testing labs

Labcorp

NeoGenomics

Integrated Oncology

Molecular Pathology

Therascreen FGFR Lab Finder

Additional reference laboratories that include FGFR as part of the panel in NGS:

Tempus

Caris Life Sciences

Foundation Medicine

Strata Oncology

Use Proprietary Laboratory Analyses (PLA) Code 0154U for the PCR tissue FGFR test.

Reach out to your reference laboratory for CPT® (Current Procedural Terminology) code information.

Consider ordering reflex testing for FGFR alterations

For your patients with tumors that are susceptible to FGFR genetic alterations, consider ordering reflex testing—adding lab tests to confirm or exclude a diagnosis based on results found in tests initially requested—for FGFR genetic alterations, from the pathologist.[8,9,16]

*Reference laboratories shown above may not be a complete list; please check with your reference laboratory to see if they can run an FGFR test.

References

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