



Gliolab

GLIOBLASTOMA FOUNDATION



UNDERSTANDING GENE FUSIONS IN GLIOBLASTOMA:

*A GUIDE TO THE ARCHER FUSIONPLEX
PAN SOLID TUMOR V2 PANEL*

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TABLE OF CONTENTS

- 1** Introduction
- 2** What Are Gene Fusions?
- 3** Why Gene Fusions Matter In Glioblastoma
- 4** Overview of the ArcherPlex Pan Solid Tumor v2 Panel
- 5** How the Test Works
- 6** Genes Covered by the Panel
- 7** Clinical Utility of Fusion Detection
- 8** Sample Collection and Processing
- 9** Insurance and Payment Information
- 10** Frequently Asked Questions
- 11** Glossary of Terms
- 12** Contact Information

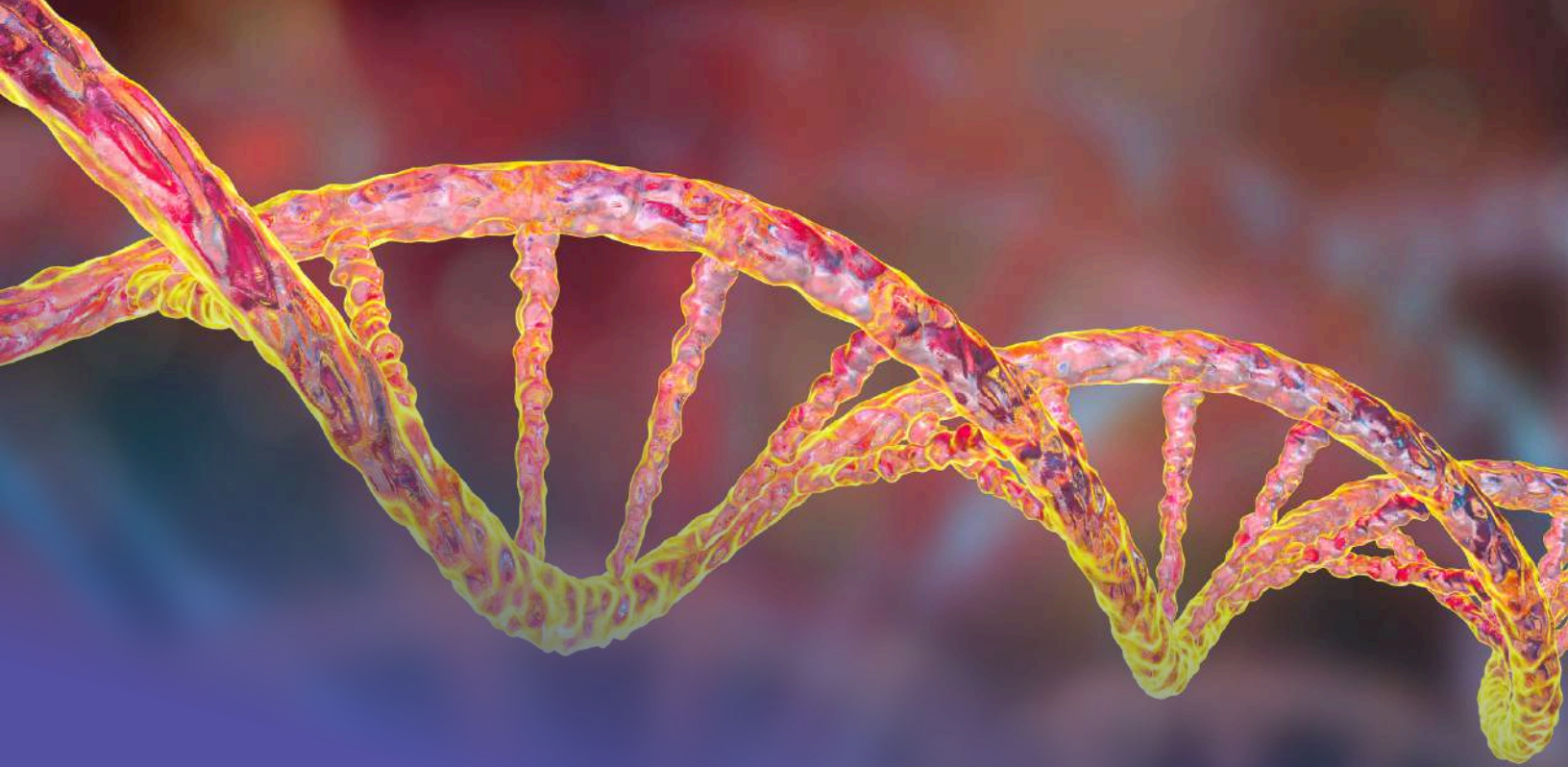


INTRODUCTION

Glioblastoma is one of the most aggressive forms of brain cancer, often requiring a personalized approach to treatment.

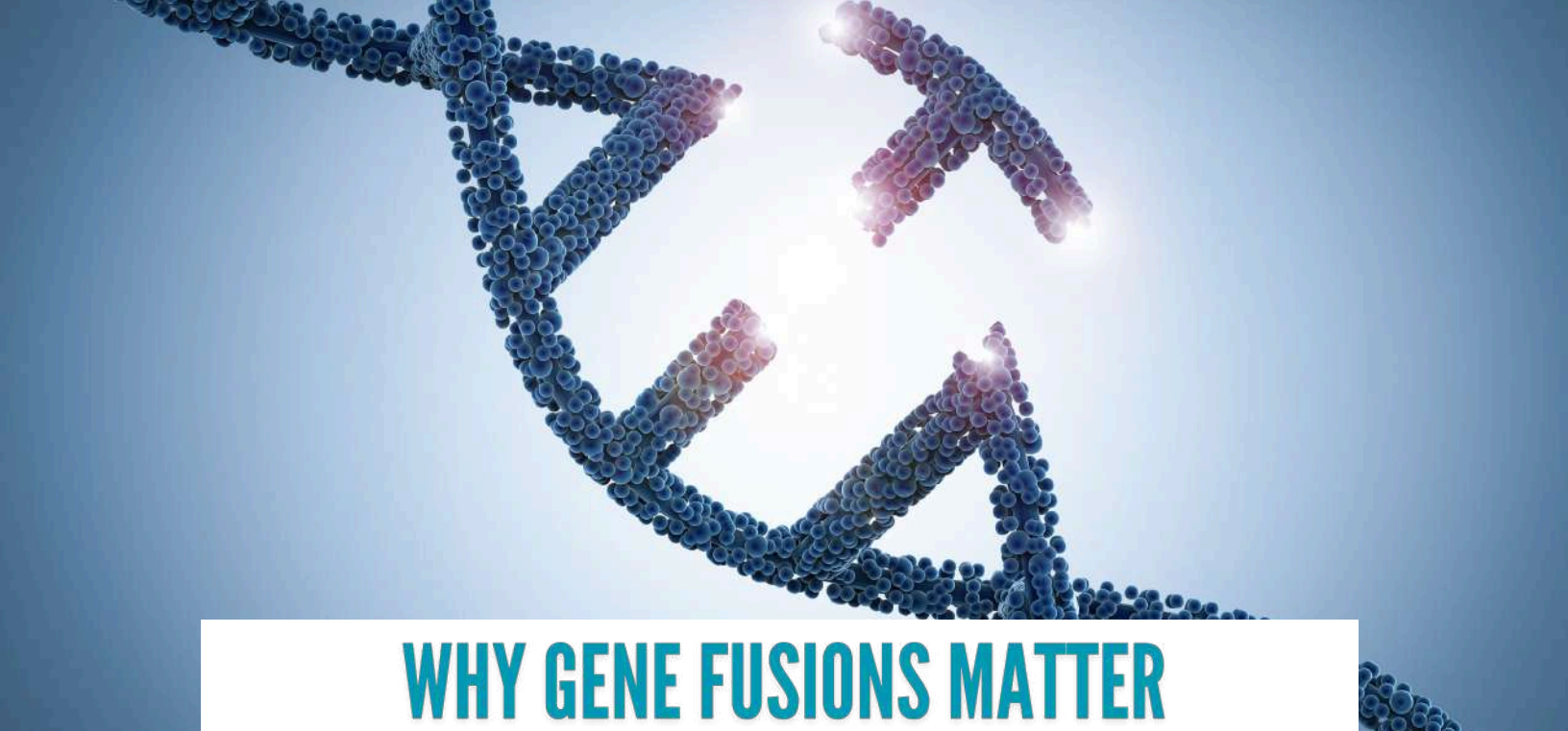
Identifying gene fusions—*abnormal links between two genes*—can offer crucial insights into the biology of a patient's tumor and open the door to targeted therapies.

This guide explains how gene fusions are detected using the Archer® FusionPlex® Pan Solid Tumor v2 Panel and how this information helps guide clinical decision-making.



What Are Gene Fusions?

Gene fusions occur when two previously separate genes become abnormally connected. This can lead to the production of abnormal proteins that drive tumor growth. In glioblastoma, and other brain tumors, *gene fusions are important biomarkers with diagnostic, prognostic, and therapeutic implications.*



WHY GENE FUSIONS MATTER IN GLIOBLASTOMA

GENE FUSIONS ARE INCREASINGLY RECOGNIZED AS:

Drivers of tumor
development

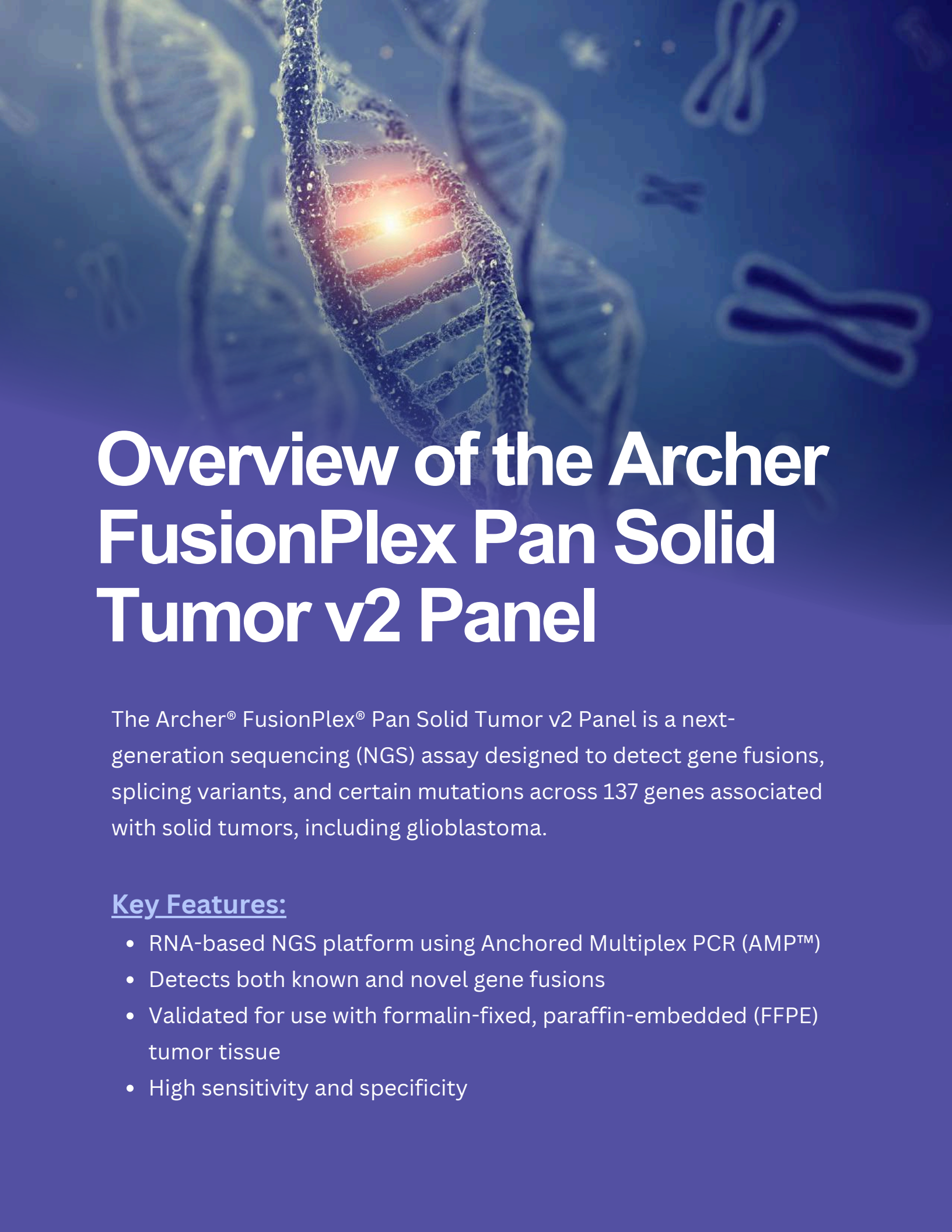
Predictors of therapy
response (e.g., NTRK fusions
can respond to TRK inhibitors)

Markers for tumor
classification (e.g., FGFR,
NTRK, MET fusions)

Targets for FDA-approved
drugs

IDENTIFYING THESE FUSIONS MAY HELP:

- *Confirm or refine diagnosis*
- *Inform prognosis*
- *Identify potential eligibility for clinical trials*
- *Suggest targeted therapy options*



Overview of the Archer FusionPlex Pan Solid Tumor v2 Panel

The Archer® FusionPlex® Pan Solid Tumor v2 Panel is a next-generation sequencing (NGS) assay designed to detect gene fusions, splicing variants, and certain mutations across 137 genes associated with solid tumors, including glioblastoma.

Key Features:

- RNA-based NGS platform using Anchored Multiplex PCR (AMP™)
- Detects both known and novel gene fusions
- Validated for use with formalin-fixed, paraffin-embedded (FFPE) tumor tissue
- High sensitivity and specificity



HOW THE TEST WORKS

SAMPLE COLLECTION

A small piece of the tumor is obtained during surgery or biopsy.



RNA EXTRACTION

RNA is extracted from the sample.



LIBRARY PREPARATION

AMP™ technology selectively amplifies RNA targets without prior knowledge of fusion partners.



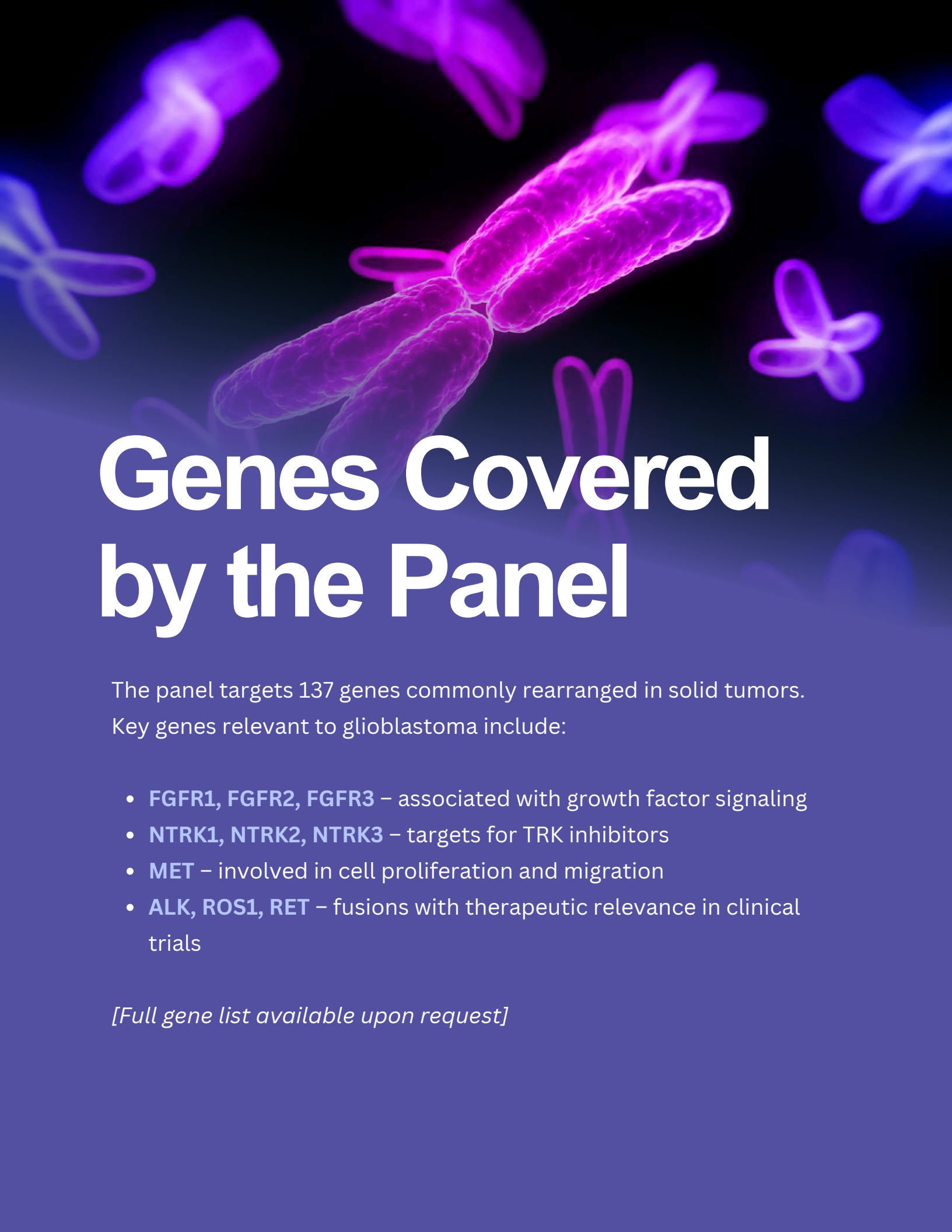
NEXT-GENERATION SEQUENCING

Amplified products are sequenced using NGS.



DATA ANALYSIS

Proprietary bioinformatics tools identify fusion transcripts, splicing events, and reportable mutations.



Genes Covered by the Panel

The panel targets 137 genes commonly rearranged in solid tumors.
Key genes relevant to glioblastoma include:

- **FGFR1, FGFR2, FGFR3** – associated with growth factor signaling
- **NTRK1, NTRK2, NTRK3** – targets for TRK inhibitors
- **MET** – involved in cell proliferation and migration
- **ALK, ROS1, RET** – fusions with therapeutic relevance in clinical trials

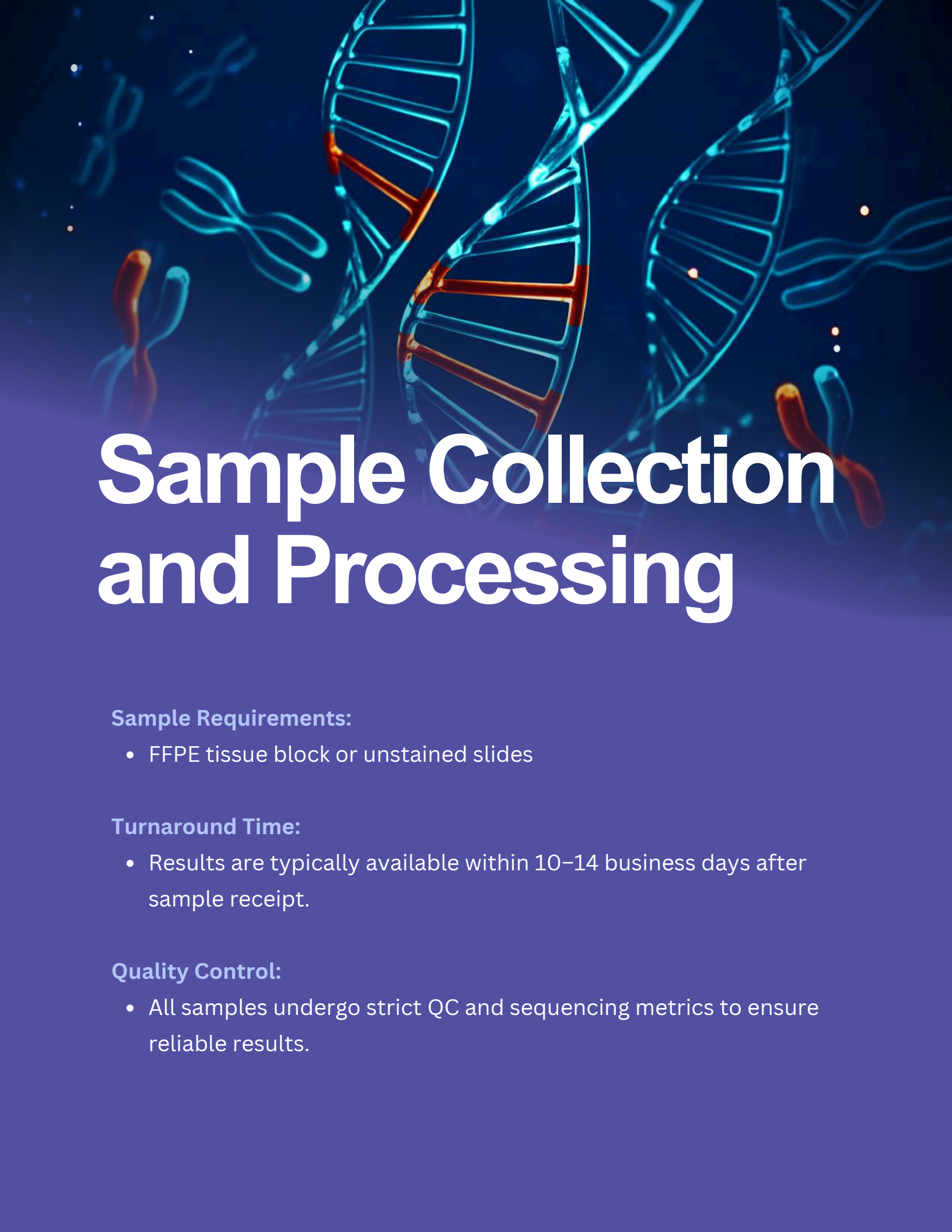
[Full gene list available upon request]



CLINICAL UTILITY OF FUSION DETECTION

Fusion detection in glioblastoma contributes to:

- Refining WHO classification (e.g., identifying infant-type hemispheric glioma via NTRK or ALK fusions)
- Therapeutic decision-making (e.g., targeted therapy for MET or NTRK fusion-positive tumors)
- Research enrollment into precision oncology trials
- Understanding tumor evolution and resistance mechanisms



Sample Collection and Processing

Sample Requirements:

- FFPE tissue block or unstained slides

Turnaround Time:

- Results are typically available within 10–14 business days after sample receipt.

Quality Control:

- All samples undergo strict QC and sequencing metrics to ensure reliable results.



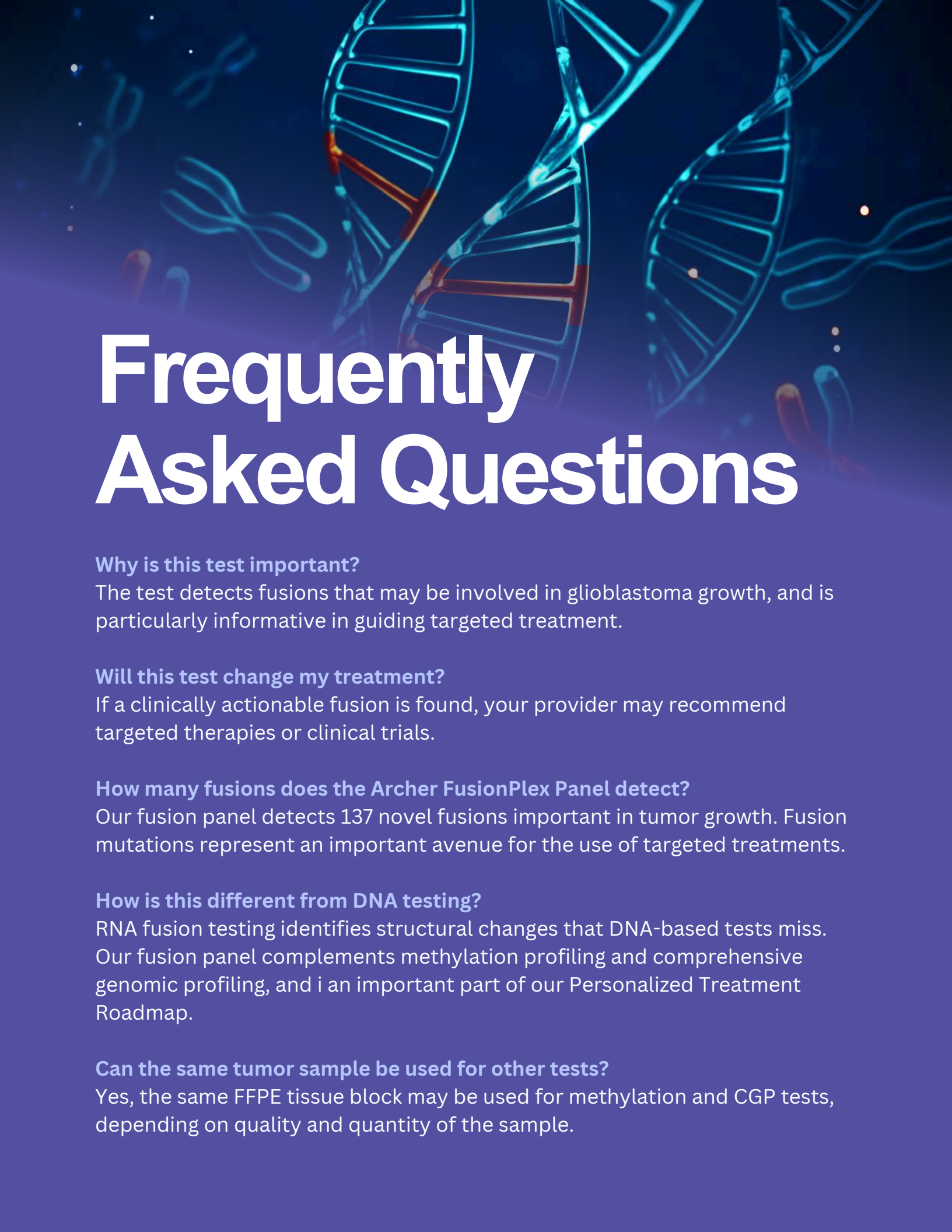
PERSONALIZED TREATMENT ROADMAP

At Gliolab, we help you and your doctor discover the treatment paths designed uniquely for you — based on your tumor profile.

*Our **Archer FusionPlex** test does more than provide data; it's an important part of our personalized treatment roadmap tailored to each patient's tumor biology. Rather than relying on one-size-fits-all protocols, care teams can use our detailed genomic insights to pinpoint therapies most likely to be effective, explore relevant clinical trials, and avoid treatments unlikely to be effective.*

With Gliolab, patients and their physicians gain clarity, direction, and a powerful tool for navigating one of the most complex and aggressive brain cancers.

Personalized Glioblastoma Care Starts at Gliolab.



Frequently Asked Questions

Why is this test important?

The test detects fusions that may be involved in glioblastoma growth, and is particularly informative in guiding targeted treatment.

Will this test change my treatment?

If a clinically actionable fusion is found, your provider may recommend targeted therapies or clinical trials.

How many fusions does the Archer FusionPlex Panel detect?

Our fusion panel detects 137 novel fusions important in tumor growth. Fusion mutations represent an important avenue for the use of targeted treatments.

How is this different from DNA testing?

RNA fusion testing identifies structural changes that DNA-based tests miss. Our fusion panel complements methylation profiling and comprehensive genomic profiling, and is an important part of our Personalized Treatment Roadmap.

Can the same tumor sample be used for other tests?

Yes, the same FFPE tissue block may be used for methylation and CGP tests, depending on quality and quantity of the sample.



GLOSSARY OF TERMS

- **Fusion Gene:** A hybrid gene formed from two previously separate genes
- **FFPE:** Formalin-Fixed, Paraffin-Embedded; a standard method of preserving biopsy tissue
- **NGS:** Next-Generation Sequencing, a technology used to read genetic material
- **AMP™:** Anchored Multiplex PCR, a method to detect unknown fusion partners
- **TRK Inhibitors:** Targeted drugs that block TRK fusion proteins



Contact and Support

*For help with new or existing test orders, please contact our support team at the phone or email below, and we'll provide assistance. Our hours of operation are Monday through Friday 8AM to 6PM Eastern Time. For providers who would like to order a test in the United States (US) please visit our website at **www.gliolab.org** for ordering instructions and more.*

Phone: (919) 309-1489

Email: support@gliolab.org



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