

Henry Ford Comprehensive Sarcoma Fusion 26 Gene Panel

Gene fusions play a key role in tumorigenesis. Many of the driver mutations are in genes that express kinases, as indicated in the tables below. Fusions in these genes often unlink the kinase domains of the proteins from regulatory subunits, resulting in constitutive activation of the kinase function. This test is used for diagnostic, prognostic, and predictive purposes.

Testing Method

Anchored Multiplex PCR (AMP™), a target enrichment chemistry used to create target enrichment libraries for next generation sequencing (NGS). AMP leverages the power of unidirectional gene specific primers (GSPs), sample indexes and barcodes for multiplex targeted NGS using low input sample types such as formalin fixed, paraffin embedded (FFPE) sections.

Highlights of the Henry Ford Comprehensive Sarcoma Fusion 26 Gene Panel

- **Fusion Sarcoma Panel** is an optimized, balanced pool of **148 gene-specific primers (GSPs) that target 26 genes** commonly mutated in sarcomas
- Permits the **simultaneous detection** of both known recurrent fusions as well as previously unidentified fusions at key breakpoints in target genes
- **Targeted sequencing assay** that simultaneously detects and identifies fusions and other mutations (such as exon skipping)
- Only **strong confidence fusions** and **oncogenic isoforms** are reported as POSITIVE or NEGATIVE
- The dilution series of the known positive control shows **0.3% technical sensitivity**

Fusions Detected and Genes Targeted

Gene	Transcript	Exons	Direction	Type
ALK	NM_004304	19, (intron 19), 20, 21, 22	5'	Fusion
CAMTA1	NM_015215	8, 9, 10	5'	Fusion
CCNB3	NM_033031	2, 3, 4, 5, 6	5'	Fusion
CIC	NM_015125	19, 20	3'	Fusion
EPC1	NM_005243	9, 10, 11	3'	Fusion
EWSR1	NM_022065	4, 5, 6, 7, 8, 9, 10, 11, 12, 13	3'	Fusion
FOXO1	NM_002015	1, 2, 3	5'	Fusion
FOXO1	NM_002015	1, 2, 3	3'	Fusion
FUS	NM_004960	4, 5, 6, 7, 8, 9, 10, 11, 14	3'	Fusion
GLI1	NM_005269	4, 5, 6, 7	5'	Fusion
GLI1	NM_005269	4, 5, 6, 7	5'	Fusion
HMG2A	NM_003483	1, 2, 3, 4, 5	3'	Fusion
JAZF1	NM_175061	2, 3, 4	3'	Fusion
MEAF6	NM_001270875	4, 5	3'	Fusion
MKL2	NM_014048	11, 12, 13	5'	Fusion
NCOA2	NM_006540	11, 12, 13, 14	5'	Fusion
NTRK3	NM_002530	13, 14, 15, 16	5'	Fusion
NTRK3	NM_002530	13, 14, 15	3'	Fusion
PDGFB	NM_002608	2, 3	5'	Fusion
PLAG1	NM_002655	1, 2, 3, 4	5'	Fusion
ROS1	NM_002944	31, 32, 33, 34, 35, 36, 37	5'	Fusion
SS18	NM_001007559	10, 11	5'	Fusion
SS18	NM_001007559	4, 5, 6, 8, 9, 10	3'	Fusion
STAT6	NM_001178078	1, 2, 3, 4, 5, 6, 7, 16, 17, 18, 19	5'	Fusion
TAF15	NM_139215	6, 7	5'	Fusion
TAF15	NM_139215	5, 6, 7	3'	Fusion
TCF12	NM_207036	4, 5, 6	3'	Fusion
TFE3	NM_006521	3, 4, 5, 6	5'	Fusion
TFG	NM_006070	4, 5, 6, 7	3'	Fusion
USP6	NM_004505	1, 2, 3	5'	Fusion
YWHAE	NM_006761	5	3'	Fusion

Ordering Information

Get started: Print a Solid Tumor test requisition form online at www.HenryFord.com/HFCPD

Specimen requirements: The presence of adequate tumor in the material submitted for analysis should be confirmed by a surgical pathologist. A section from archival paraffin material or frozen surgical biopsies should be confirmed to contain > 50% tumor by a surgical pathologist. If the submitted material for analysis contains < 50% of tumor, areas of predominant tumor will be micro-dissected to enrich for neoplastic cells.

- Formalin-fixed, paraffin-embedded tissue, preferably no older than 2 years
- 5-6 tissue sections at 5-6 micron thickness (please include H&E slide and a copy of pathology report)
- Cytology slides (cell block with 500+ tumor cells, submit block or 5-6 tissue sections at 5-10 micron thickness depending on cellularity)

TAT: 5-10 business days

Mail test material to:

Henry Ford Center for Precision Diagnostics

Pathology and Laboratory Medicine
Clinic Building, K6, Core Lab, E-655
2799 W. Grand Blvd.
Detroit, MI 48202

CPT Codes: 81445, G0452. 88381 may apply

Contact us: Client Services, Account and Billing Set-up, and connect with a Molecular Pathologist at (313) 916-4DNA (4362)

For more information on Comprehensive Molecular Services please visit our website www.HenryFord.com/HFCPD