



Test Catalog

Diagnostic. Prognostic. Predictive. Predisposition.



Thyroid NGS Fusion Panel

Alternative Name

Thyroid Fusion Panel

Methodology

Molecular

Test Description

The Thyroid NGS Fusion Panel is an RNA-based next-generation sequencing panel that detects translocations and fusions with known and novel fusion partners of these genes: ALK, AXL, BRAF, CCND1, FGFR1, FGFR2, FGFR3, GLIS3, MET, NRG1, NTRK1, NTRK2, NTRK3, PAX8, PPARG, RAF1, RET, ROS1, and THADA.

Clinical Significance

The Thyroid NGS Fusion Panel is intended to detect gene fusions associated with thyroid cancer to aid in diagnosis, disease classification, prognosis, and therapy selection.

The spectrum and prevalence of gene fusions in thyroid cancer ranges from single cases up to 80%, depending on the specific type of cancer. Fusions of tyrosine kinases activating the MAPK pathway, such as RET, BRAF, NTRK1, NTRK2, NTRK3, and ALK, can be found in 6-46% of sporadic papillary thyroid carcinoma (PTC) while PPARG and THADA gene fusions are found dominantly in follicular thyroid carcinoma, follicular adenomas, and follicular variants of PTC. Medullary thyroid carcinoma (MTC) cells harbor RET and ALK gene fusions. While RET mutations are the primary drivers of medullary thyroid carcinoma (MTC), ALK and RET fusions have been reported. For radioactive iodine (RAI)-refractory thyroid cancer, several FDA-approved tyrosine kinase inhibitors have shown efficacy in improving progression-free survival, including sorafenib and lenvatinib for progressive DTC, and vandetanib and cabozantinib for MTC.

Specimen Requirements

- **FFPE tissue:** Paraffin block is preferred. Alternatively, send 1 H&E slide plus 5-10 unstained slides cut at 5 or more microns. Please use positively-charged slides and 10% NBF fixative. Do not use zinc fixatives.

Storage & Transportation

Use cold pack for transport, making sure cold pack is not in direct contact with specimen.

CPT Code(s)*

81449

Medicare MoIDX CPT Code(s)*

81449

New York Approved

Yes

Level of Service

Global

Turnaround Time

21 Days

References

1. Yakushina VD, Lerner LV, Lavrov AV. Gene Fusions in Thyroid Cancer. *Thyroid*. 2018 Feb;28(2):158-167. doi: 10.1089/thy.2017.0318. PMID: 29281951.

*The CPT codes provided with our test descriptions are based on AMA guidelines and are for informational purposes only. Correct CPT coding is the sole responsibility of the billing party.

Please direct any questions regarding coding to the payor being billed.

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