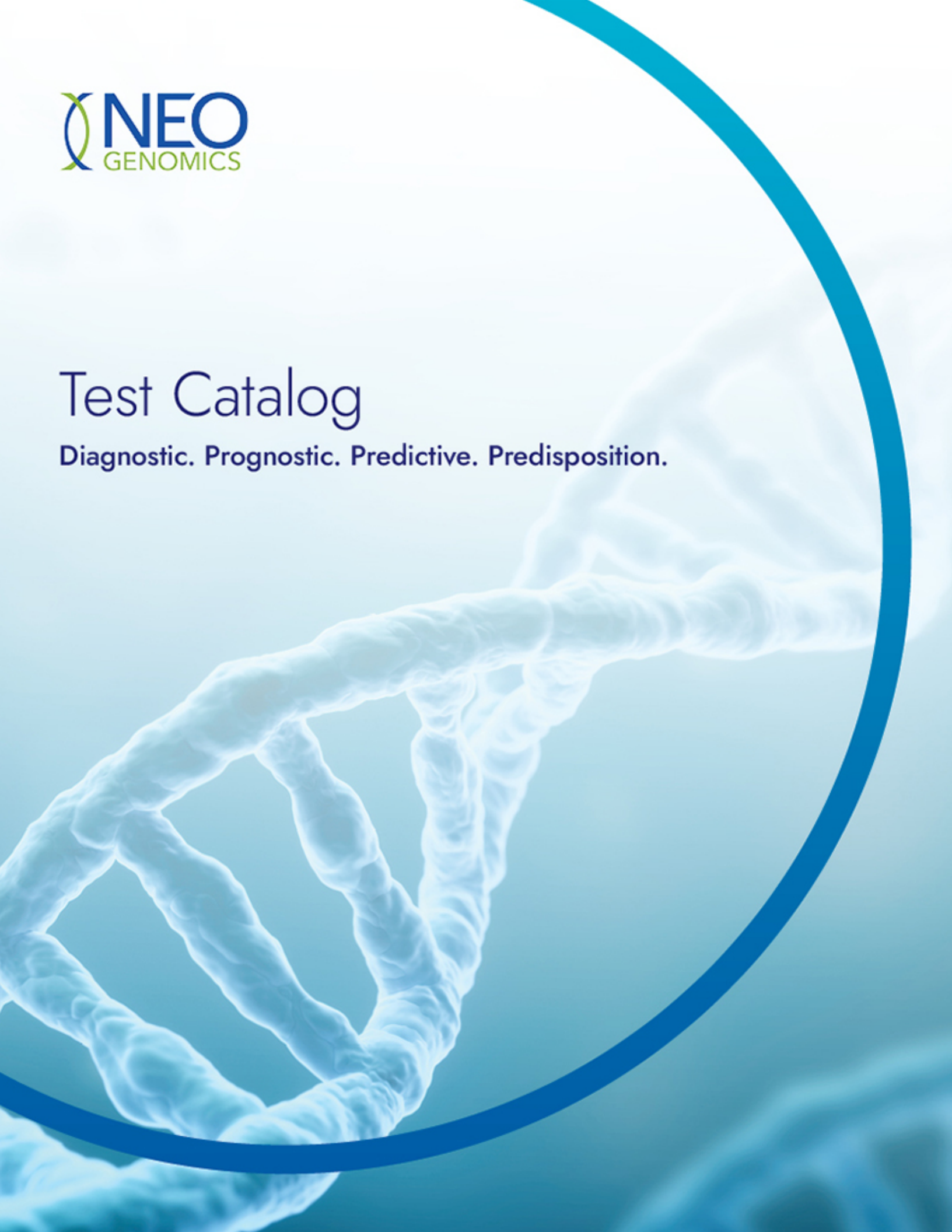
NEO GENOMICS

Test Catalog

Diagnostic. Prognostic. Predictive. Predisposition.



NTRK & RET NGS Fusion Panel

Alternative Name
NTRK & RET NGS Fusion Profile

Methodology
Molecular

Test Description
The NTRK & RET NGS Fusion Profile is an RNA-based next-generation sequencing panel that detects translocations and fusions of the genes NTRK1, NTRK2, NTRK3 and RET with known and novel fusion partners. Point mutations in select exons of these four genes are also detected. Examples of some of the published fusions detectable in this test include CD74-NTRK1, LMNA-NTRK1, MPRIP-NTRK1, TPM3-NTRK1, SQSTM1-NTRK1, PPL-NTRK1, AFAP1-NTRK2, PAN3-NTRK2, TRIM24-NTRK2, BTBD1-NTRK3, ETV6-NTRK3, CCD6-RET (aka RET-PTC1), KIF5B-RET, and NCOA4-RET (aka RET-PTC3).

This test may be used to select patients for the following FDA-approved therapies:

- NTRK- ROZLYTREK® (entrectinib), VITRAKVI® (larotrectinib)
- RET- GAVRETO™ (pralsetinib), RETEVMO™ (selpercatinib)

See also NTRK NGS Fusion Panel and Lung NGS Fusion Panel (Complete or Limited).

Clinical Significance
NTRK gene fusion is the primary mechanism of oncogenic activation of TRK proteins. Gene fusions have been reported in >20 tumor types. They occur in >90% of certain rare tumors and are considered essentially pathognomic in secretory breast cancer, congenital fibrosarcoma, congenital mesoblastic nephroma, and mammary analogue secretory carcinoma (MASC). Tumors with intermediate NTRK fusion frequencies (5-25%) include papillary thyroid cancer (PTC), GIST without KIT/PDGFRA/RAS mutations, Spitzoid neoplasms, and certain pediatric gliomas. NTRK fusions are detected in <5% of a wide range of common tumors including non-small cell lung cancer (NSCLC, ~1%); pancreatic adenocarcinoma; head and neck squamous cell; breast, colorectal, and renal cell carcinoma; melanoma; and adult brain tumors such as astrocytoma and glioblastoma.

RET translocations detected in this test are common in papillary thyroid carcinoma (>20%) and are also seen in 1-2% of NSCLC.

Numerous TRK and RET inhibitor therapies are in various stages of clinical availability, trial, and development.

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. Make sure cold pack is not in direct contact with specimen.

CPT Code(s)*

81194, 81479 (as of 01/01/2021); Prior to CPT Code was 81479

Medicare MolDX CPT Code(s)*

81479

New York Approved

Yes

Level of Service

Global

Turnaround Time

21 days

References

1. Cocco E, Scaltriti M, Drilon A. NTRK fusion-positive cancers and TRK inhibitor therapy.*Nat Rev Clin Onco*. 2018;15:731-747.
2. Chen Y, Chi P. Basket trial of TRK inhibitors demonstrates efficacy in TRK fusion-positive cancers.*J Hematol Oncol*. 2018;11:78.
3. Farago AF, Taylor MS, Doebele RC et al. Clinicopathologic features of non-small-cell lung cancer harboring an ntrk gene fusion. *JCO Precis Oncol*. 2018: 10.1200/PO.18.00037.

*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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Committed to research as the means to improve patient care, we provide Pharma Services for pharmaceutical companies, in vitro diagnostic manufacturers, and academic scientist-clinicians. We promote joint publications with our client physicians. NeoGenomics welcomes your inquiries for collaborations. Please contact us for more information.

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