CONNECTGENE Genomics Oncology

Unlock the Power of Genomics

NTRK TESTING

NTRK testing through next generation sequencing enables the detection of NTRK fusions in the NTRK1, NTRK2, and NTRK3 genes, which can help patients determine their likely response if considering treatment with TRK inhibitors.

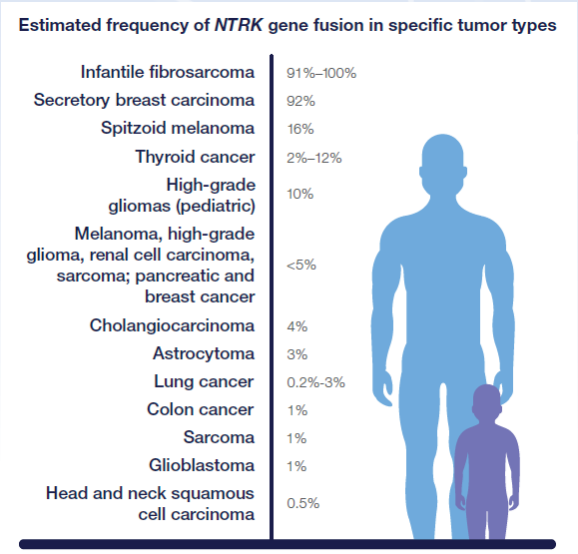

Figure 1. Estimated frequency of NTRK gene fusion in specific tumour types (Cocco, Scaltriti & Drilon, 2018)

What is *NTRK* Testing?

NTRK gene alterations are found in more than 90% of rare adult and childhood cancer types (such as infantile fibrosarcoma, mammary analogue secretory carcinoma, secretory breast carcinoma and cellular or mixed congenital mesoblastic nephroma).[1-2] A gene fusion occurs when a hybrid gene is formed from two genes that are normally separate, this can happen through a variety of mechanisms.[3-4]

The NTRK gene family each encode a separate TRK protein (TRKA, TRKB, or TRKC). Unless inhibited, NTRK gene fusion results in the overexpression of the TRK fusion protein. NTRK genes then tend to fuse with unrelated genes. Once fusion has occurred NTRK fusions can lead to the development and growth of solid tumours in a variety of tissue types.[4]

Our NTRK testing can expose fusions in NTRK1, NTRK2, and NTRK3. Next generation sequencing is known to be the most reliable method to test for fusion, point mutation, and splicing involving NTRK1, NTRK2, and NTRK3 genes.[5]

The power of Genomic Testing for NTRK fusions

NTRK fusions have emerged as targets for cancer therapy, there are now recently developed novel compounds that are selective inhibitors of the constitutively active rearranged proteins.[1] Inhibiting the NTRK fusion and preventing oncogenesis. Through genomic testing we are able to detect NTRK fusions that may be used for targeted therapy.

How do I organise Testing?

1. Contact us for the test request form. When ready, return your completed form
2. We arrange for your blood or biopsy tissue sample to be sent to the laboratory.
3. We receive your tissue sample for testing.
4. Our testing partner completes the requested testing in their Brisbane laboratory.
5. Your personalised report is sent to nominated health care professional

1. Rare Cancers Australia. (2019). Rare Cancers. Retrieved from https://www.rarecancers.org.au/page/1100/rare-cancers
2. Cancer Australia. (2019). Rare and Less Common Cancers. Retrieved from https://canceraustralia.gov.au/about-us/news/rare-and-less-common-cancers
3. Jardim, D. L., M. Schwaederle, C. Wei, J. J. Lee, D. S. Hong, A. M. Eggermont, R. L. Schilsky, J. Mendelsohn, V. Lazar and R. Kurzrock (2015). "Impact of a Biomarker-Based Strategy on Oncology Drug Development: A Meta-analysis of Clinical Trials Leading to FDA Approval." J Natl Cancer Inst 107(11).
4. Subbiah, V. and R. Kurzrock (2016). "Universal genomic testing needed to win the war against cancer: Genomics is the diagnosis." JAMA Oncology 2(6): 719-720
5. Amatu A, Sartore-Bianchi A, Siena S. NTRK gene fusions as novel targets of cancer therapy across multiple tumour types. ESMO Open. 2016;1(2):e000023.

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