



THERAPEUTIC, DIAGNOSTIC

Therapeutics and Diagnostics for Cancer Targeting a Novel TrkB Splice Variant

Brief Technology Description

Methods to treat or diagnose a variety of cancers using agents targeting a novel TrkB splice variant

BUSINESS OPPORTUNITY

Exclusive licence
Non-exclusive license
Sponsored research
Start-up

TECHNOLOGY TYPE

Therapeutic
Diagnostic

STAGE OF DEVELOPMENT

Preclinical *in vivo*

PATENT INFORMATION

[Patent Pending](#)

INVESTIGATOR OVERVIEW

Eric Holland, M.D., Ph.D; Senior VP and Director; Human Biology Division

LEARN MORE

Tech ID: 20-118
partnering@fredhutch.org
206-667-4304

Technology Overview

Cancer-driving mutations are found across a wide range of tumor types yet are often only present in a subset of tumor cells, making early detection and subsequent treatment difficult. Many cancer types are driven by the signaling pathways downstream of tyrosine kinase receptors such as Akt, Ras, and Stat. Previously developed therapeutics targeting specific kinases have been highly profitable, yet resistance often occurs due to alternative methods of activating tumor dependent downstream pathways. Inhibitors of the Tropomyosin Kinase Receptors (TRK) family encoded by NTRK genes, are currently used for treating tumors with Trk gene fusions but have limitations due to tumor resistance. Hutch investigators have discovered a novel splice variant of the tyrosine receptor kinase B [TrkB] protein, TrkB.T1, that is highly expressed across nearly all human cancers when compared to normal. Using a highly specific novel antibody they developed against this isoform, their *in vitro* and *in-vivo* data demonstrate that this TrkB isoform has a causal role in the development of many types of cancers, and that its forced expression drives multiple tumor types in mice. Therefore, TrkB.T1 provides a useful validated target for cancer therapeutics, as well as represents a biomarker for the detection and observation of a variety of cancers.

Applications

- Use of their novel antibody as a rapid cancer diagnostic from blood or urine
- Discovery of small molecule binders for diagnostics and therapeutics
- Development of cell therapies against these targets

Potential Advantages

- Quicker and less invasive diagnostics for a variety of cancers
- Improved efficacy over commercial TRK receptor targeted therapies.

Market Overview: The market for cancer therapeutics is expected to reach 181 billion USD by 2026, and the global market for cancer diagnostics is expected to reach 249 billion by 2026.