

High-throughput Assay to Identify New Cancer Drugs

Summary (1024-character limit)

The National Cancer Institute seeks parties interested in collaborative research to evaluate or commercialize a diagnostic tool that can identify new drugs that increase chromosome instability.

NIH Reference Number

E-031-2013

Product Type

- Diagnostics
- Research Tools

Keywords

- high-throughput assay
- drug discovery
- chromosome instability (CIN)
- green fluorescent protein labeled chromosome

Collaboration Opportunity

This invention is available for licensing.

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Description of Technology

The National Cancer Institute seeks parties interested in collaborative research to evaluate or commercialize a diagnostic tool that can identify new drugs that increase chromosome instability. Although chromosomal instability is generally thought of as a driver of tumor growth, a threshold level exists where CIN becomes a barrier to tumor growth and therefore can be exploited therapeutically.

Most human malignant solid tumors have been shown to contain chromosomal abnormalities. Chromosomal instability (CIN) is the continuous formation of novel chromosome mutations at a higher rate than that of normal cells. Although chromosomal instability (CIN) is generally thought of as a driver of tumor growth, a threshold level exists where CIN becomes a barrier to tumor growth and therefore can be exploited therapeutically. Drugs known to increase CIN beyond the therapeutic threshold are

currently few in number, and the clinical promise of targeting the CIN phenotype warrants new screening efforts.

Researchers at NCI developed a new high-throughput assay for measuring CIN as a tool to identify new compounds that increase CIN in cancer cells and therefore have therapeutic potential. The assay uses a unique, green fluorescent protein (GFP)-labeled human artificial chromosome (HAC) that can be introduced into cancer cells. Drug effects on CIN in cells containing the GFP-labeled HAC can be identified easily and accurately by flow cytometry.

Potential Commercial Applications

Screening tool to identify compounds that increase CIN in cancer cells for the development of new therapeutic strategies.

Competitive Advantages

High-throughput format allows for rapid screening of large numbers of compounds

Inventor(s)

Vladimir Larionov (NCI), William Earnshaw (NCI)

Development Stage

- Prototype

Patent Status

- **Research Material:** NIH will not pursue patent prosecution for this technology

Therapeutic Area

- Cancer/Neoplasm