Predictive Markers for Dasatinib to Treat Solid Tumors

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SUMMARY

Investigators at the UCLA Geffen School of Medicine have identified potential markers to predict the response of breast cancer patients to dasatinib, an oral multi-kinase SRC/ABL inhibitor. There is potential to use these markers in the clinical development of dasatinib and other SRC kinase inhibitors that treat solid tumors.

BACKGROUND

Cancer is one of the leading causes of death worldwide, killing millions of people every year. Of the different types of cancers, breast cancer is the leading cause of death among women, affecting over one million women worldwide every year. Currently, dasatinib is approved to treat chronic myeloid leukemia (CML) and is in development to treat solid tumors, including breast cancer. However, there is a need to be able to identify patients most likely to respond to drugs like dasatinib. New diagnostics methods will be especially useful for women whose breast cancers fall under a specific triple negative subtype (estrogen receptor negative, progesterone receptor negative, and HER2 negative), and therefore lack effective treatments. Due to the lack of effective treatments, there is a need to identify the patients that might benefit from dasatinib.

INNOVATION

UCLA researchers have identified predictive markers to identify human breast cancer cells that are likely to respond to dasatinib or to therapy with another SRC kinase inhibitor. This unique gene set has been identified by using an in vitro pharmocogenomic approach.

APPLICATIONS

- Use markers to identify individuals who are likely to respond, or are responsive, to therapy with dasatinib or other SRC kinase inhibitors
- Predict response of dasatinib to treat the triple negative subset of women with breast cancer

ADVANTAGES

- Predicts efficacy and response of dasatinib therapy on triple negative breast cancer subtypes
- Genes expressed in patients with specific breast cancer subtypes may be sensitive to therapy with SRC kinase inhibitors
- Predictive markers may be used in clinical development of compounds to treat solid tumors

STATE OF DEVELOPMENT

Inventors have employed the approach in human breast cancer cell lines in vitro. These markers will need to be validated in a clinical setting.

RELATED MATERIALS

- Dasatinib, an orally active small molecule inhibitor of both the src and abl kinases, selectively inhibits growth of basal-type/"triple-negative" breast cancer cell lines growing in vitro. *Breast Cancer Res Treat.* (2007)

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	8,007,995	08/30/2011	2006-263

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OTHER INFORMATION

KEYWORDS

diagnostics, biomarkers, predictive markers, dasatinib, human breast cancer, kinase inhibitor, triple negative, solid tumors, gene set, clinical development

CATEGORIZED AS

- **Medical**
  - Diagnostics
  - Disease: Cancer

RELATED CASES

2006-263-0

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