Biomarkers Of Response And Synergistic Combinations With ERK Targeted Therapies In Human Cancers

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SUMMARY

UCLA researchers have identified a set of genomic markets that identify a group of human cancer cell lines more likely to respond to ERK1/2 inhibitors. These markers are believed to be critical in identifying those patients that will most likely respond to ERK1/2 inhibition used in cancer therapy.

BACKGROUND

Extracellular signal-regulated kinase (ERK) is a kinase that activates many downstream targets through phosphorylation. The ERK-signaling pathway (also referred to as MAPK-signaling pathway) mediates various cellular responses, including cell proliferation, differentiation, growth, migration, and survival. This pathway is activated in many types of cancer. Due to the prevalence of the pathway, it is being explored for cancer therapy. However, since the pathway is found activated in so many types of tumors, there is a need to for a reliable method or diagnostic tool to identify which tumor types are most likely to respond to ERK inhibition.

INNOVATION

- Patient response prediction tool to ERK1/2 inhibitors
- Based on several biomarkers identified from a comprehensive analysis of various tumor cell types treated with the inhibitors SCH77284 and BVD-523.

APPLICATIONS

Diagnostic tool to:

- Further characterize a patient's tumor
- Predict the patients most likely to benefit from ERK1/2 inhibition

ADVANTAGES

- ERK1/2 targeted therapy
- Based on the UCLA/TORL response dataset for identification of biomarkers
- Use of biomarkers that have not been previously implicated in biological mechanisms of response to ERK inhibition

RELATED MATERIALS

- Kalous, Ondrej, et al. "Dacomitinib (PF-00299804), an irreversible Pan-HER inhibitor, inhibits proliferation of HER2-amplified breast cancer cell lines resistant to trastuzumab and lapatinib." Molecular cancer therapeutics 11.9 (2012): 1978-1987.

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Predictive Markers for Dasatinib to Treat Solid Tumors

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OTHER INFORMATION

KEYWORDS

Small Molecules/Pharmaceuticals, Cancer Therapy, Biomarkers, Synergistic Interacting, ERK-signaling pathway, Drug-Response Prediction

CATEGORIZED AS

- **Medical**
  - Disease: Cancer
  - Screening
  - Therapeutics

RELATED CASES

2015-289-0

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