Inhibiting Insulin-Like Growth Decreases Cancer Cell Growth, Improves Chemotherapy Results

“Lead Inventors: Argiris Efstratiadis M.D., Ph.D.; David Berkowitz; Apostolos Klinakis

Anti-Cancer Drug Inhibits Insulin-Like Growth, Decreases Cancer Cell Growth: Inhibition of Insulin-like Growth Factor I Receptor Kinase (IGF1 RK) decreases cancer cell growth and may also render cancer cells more susceptible to chemotherapy. The compound picropodophyllin shows exquisite selectivity for the IGF1 RK, and thus could lead to a new class of chemotherapeutic drugs. Currently there is no drug on the market that acts upon the IGF1 RK. Development of such a drug is, therefore, an emerging macromolecular target of great interest. Moreover, there is an emerging association between basal cancers and Kras amplification, in which Kras mutations are found at high frequencies in different human tumors.

Anti-Cancer Treatment Decreases Cancer Cell Growth in Animal Trials: This technology provides small molecule compositions that are analogues of picropodophyllin, as well as a in vivo animal model (the Kras mouse) to test the effects of these anticancer agents on tumor growth.

Applications: • Therapeutic treatment for breast cancer and other cancers • In vivo animal model to test the effect of pharmacological agents on tumor growth

Advantages: • IGF1 RK is implicated in many prevalent cancers and its inhibition would likely have lesser side effects than current chemotherapeutic agents • Small molecules have advantages over antibodies, including circumventing possible immune responses, as well as permitting oral administration potentially increasing biological half-life, and lower production costs

Patent Status: Patent Pending

Licensing Status: Available for Licensing and Sponsored Research Support”

Inventors

Argiris Efstratiadis M.D.