Abstract

Mission

Protein kinases are involved in the control of a large number of cellular processes and play a central role in human physiology. More than 500 genes encoding protein kinases have been identified in the human genome, and it is estimated that about 30 percent of all human proteins may be phosphorylated by kinases. Deficiency in kinase activity has implications in cancer, central nervous system disorders, autoimmune diseases and immunosuppression, diabetes, osteoporosis, and various metabolic disorders. Small-molecule kinase inhibitors have therefore moved into the focus of the pharmaceutical industry as a new class of drugs, which is expected to produce new and more efficient treatments and grow significantly within the coming decade.

The proposed project brings together the unique and proprietary technologies of three SMEs and the expertise of academic research partners to create a new platform for lead compound discovery with a focus on protein kinases. Three kinases will be targeted for the development of inhibitory compounds.
The academic partners will contribute a modern high-throughput platform for protein expression and crystallization (Israel Structural Proteomics Centre), and expertise in the biochemistry and biology of the targeted kinases combined with the principles of the use of bioisosterism in the synthesis of novel chemical compounds (University of Turin). The applied principles and technologies will provide new IP opportunities for the partner SMEs in the otherwise crowded kinase inhibitor IP space and will help in the design of new strategies in the discovery of inhibitors for novel kinase targets in the treatment of cancer. The generated compounds will be sold and/or out-licensed to large pharmaceutical companies for continued development. This market is currently undergoing continuous expansion due to large cuts in early drug discovery within most pharmaceutical companies.

**Financing**

EU FP7

Other website  
http://cordis.europa.eu/project/rcn/107978_en.html

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