Potential New Treatment in EGFR-TKI Resistant Cancer

Epidermal Growth Factor Receptor (EGFR) drives cancer progression in a large number of solid tumors. EGFR inhibitors are the standard of care for most of these patients. Patients may respond to treatment initially, but nearly all will develop resistance within a year.

The Solution

EGFR activity is important for driving tumor growth, but the protein itself is essential for the tumor’s survival. University of Michigan team Mukesh Nyati, Ph.D. and Theodore Lawrence, M.D., Ph.D., found that degrading EGFR kills cancer cells selectively by specifically targeting this receptor, which is more effective than inhibiting EGFR alone.

Nyati and Lawrence, along with Christopher Whitehead, Ph.D., M.B.A., developed DGD1202, a small molecule that is selectively effective in inducing phosphorylated-EGFR degradation in tumors, including tyrosine kinase inhibitors (TKI)-resistant tumors.

This new approach will be more effective and less toxic to normal tissues than current strategies being used because of the extraordinary selectivity of DGD1202.
A new treatment for EGFR-TKI resistant cancer

benefits patients with no long-term treatment options. DGD1202 is effective in inhibiting EGFR in tumors without manifesting toxicities or affecting the EGFR in adjacent host tissues.

Significant Need
DGD1202 provides a treatment option for EGFR-driven TKI resistant patients who have developed resistance to all other currently available therapeutic alternatives.

Compelling Science
DGD1202 has been developed and tested in a variety of in vitro and in vivo models for efficacy.

Competitive Advantage
DGD1202 does not affect the EGFR in adjacent host tissue and does not manifest toxicities seen with other agents.

MTRAC Project Key Milestones

Obtain the co-crystal structure of EGFR and DGD1202

Conduct in vivo tests to assess pharmacokinetics (PK) and pharmacodynamics (PD) of DGD1202 and determine the maximally tolerated dose (MTD) by clinically relevant routes of administration

Establish correlation between route of administration, dose, and duration of treatment (schedule) in mice

Conduct efficacy and long-term safety of DGD1202 in multiple TKI-resistant, EGFR-dependent tumor models

Overall Commercialization

Begin discussions with regulatory consultants regarding the quickest path to an Investigational New Drug (IND) approval

Regulatory Pathway

One issued patent for background IP, one patent filed for composition of matter and methods of use

Intellectual Property

A number of investors interested

Engage Investors

Initial clinical indication in non-small cell lung cancer

Product Launch Strategy

Experienced senior management team assembled, formally licensed to a biotechnology company

Complete Business Formation

MTRAC funding and guidance helped us determine the milestones to fill gaps in the technology, and form the best team to successfully move our research to the next level.

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