Innovations
UNIVERSITY OF COLORADO
ANSCHUTZ MEDICAL CAMPUS

Small Molecule Inhibitor of AMP-Activate Protein Kinase

Product

Selective AMPK Inhibitor

Indication

Glioblastoma Multiforme

Value Propositions

- Prophylaxis and treatment of GvHD
- Potential use in other diseases such as IBD

Market

- $320 Million—US glioblastoma therapeutic market in 2020

Intellectual Property

- PCT published*
- Available for licensing

Background on CU4954H

Cancer stem cells have been attributed to cancer recurrence and drug resistance. Studies suggest AMP-activated protein kinase (AMPK) is critical in maintaining cancer stem cells (CSCs), and that AMPK inhibition may eliminate CSCs or sensitize them to cytotoxic chemotherapy.

Among other cancer types, glioblastoma multiforme may be particularly susceptible to AMPK inhibition. Glioblastoma is the most common and aggressive brain tumor in adults. The disease carries a poor prognosis. Overall survival is typically in the range of 12–15 months. Effective therapeutic options are desperately needed.

Technical Innovation

Dr. Reigan has led a team of scientists at the University of Colorado to develop selective oxindol-3-ylidene inhibitors of AMPK. The inventors selected the lead therapeutics from fifty computationally designed candidate compounds with in-vitro inhibitory potency against the purified AMPK protein. The therapeutics are exciting discoveries since there are currently no commercially available inhibitors that are specific to AMPK. The compounds may be beneficial in the treatment of cancers such as glioblastoma multiforme. The inventors hope to test their lead compounds in models of glioblastoma to examine efficacy as a single agent or as a combination therapy.

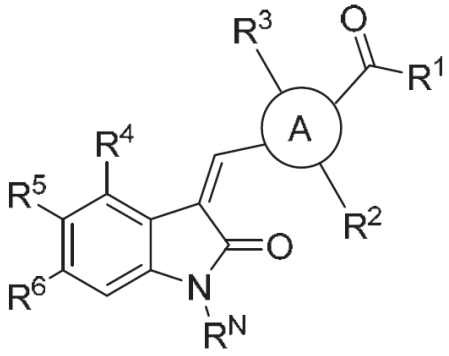

Figure: General chemical structure of the oxindol-3-ylidenes AMPK inhibitor compounds

Contact

Jeff Walenta
Jeff.walenta@cuanschutz.edu

Ref# CU4954H

303-724-0220
innovations.cuanschutz.edu

PCT Patent: PCT/US2020/04061—"AMP-Activated Protein Kinase Inhibitors and Methods of Making and Using the Same"—Published January 7th, 2021