Docket #: S18-539

PI4 Kinase Inhibitors as Anticancer and Antiviral Agents

Technology summary

Researchers at Stanford have developed a class of therapeutic compounds which can selectively inhibit PI4 kinase (PI4K) and related proteins. This includes disrupting the related interaction of basic amino acid PIP2 pincer (BAAPP) domain with PIP2. Many cancers rely on PI4-kinase (PI4K) signaling for proliferation and metastasis. Thus, this technology is a source of therapeutic candidates against cancers associated with PI4K. Likewise, it can serve as a broad-spectrum antiviral or antimicrobial. Pathogens which rely on PI4K or BAAPP-PIP2 can be neutralized and its replication abrogated. Although this class of compounds has been terminated in preclinical development by multiple big pharma companies due to severe toxicity associated with inhibiting PI4K in vivo, the researchers believe there could be a therapeutic window in some clinical scenarios, including HCV, plasmodium, and ebola virus. These could also be useful tool compounds to study the mechanism of in vivo toxicity associated with PI4K inhibition.

Applications

- Pharmacologic antagonists of PI4-kinase in the treatment of cancer or metastasis
- Broad-spectrum antiviral or antimicrobial for pathogens involving PI4K or BAAPP-PIP2

Advantages

- High potency against PI4K and related proteins

- Demonstrated improved efficacy and selectivity over previously reported PI4K inhibitors

Patents

- Published Application: WO2020191205
- Published Application: 20220153711
- Published Application: 20250326725
- Issued: 12,415,788 (USA)

Innovators

- Jeffrey Glenn
- Mark Smith
- Kaustabh Basu
- Stephen Stabler
- Edward Pham

Licensing Contact

Mona Wan

Senior Licensing Manager for Special Projects

Email