NSAID-Derived Selenazoles/Thiazoles as Potential Cancer Therapeutics ID# 2014-4259



TECHNOLOGY READINESS LEVEL 4-7

Seeking

Investment | Licensing | Research

Keywords

- anti-cancer agent
- pancreatic cancer
- aspirin
- NSAID
- AS-10

Researchers

Arun K. Sharma Associate Professor <u>Online Bio</u>

Shantu Amin Professor Website

Daniel Plano Post-Doctoral Fellow

Other Researchers Deepkamal Karelia

Originating College College of Medicine

Office of Technology Management Contact Martinez, Alison

Novel Compound for Pancreatic Cancer

Technology Summary

A cyclic Se-Aspirin compound, AS-10, was identified through extensive SAR studies focused on Se-NSAID hybrid compounds based on potency determination, toxicity, and drug-likeness. AS-10 is selectively toxic to cancer cells in vitro, demonstrating high efficacy across different PDAC cell lines at 48h, with IC50 ranging from 0.7-2.5 μ M compared to Gemcitabine (Gem), which has an IC50 >500 μ M. AS-10 inhibits tumor growth without apparent systemic toxicity by inducing apoptosis in various cancer cells, especially PDAC. Experimental evidence shows a synergistic effect with Gem observed both in cell culture and xenograft mouse models in both male and female mice.

AS-10

Application & Market Utility

Pancreatic cancer is one of the deadliest cancers, with a median survival of less than one year and a five year survival rate of less than 10%. Most patients do not have symptoms in earlier stages – 80% of pancreatic cancers are metastatic at the time of diagnosis. Given this dire prognosis, AS-10 may address a significant unmet need, aiming to improve outcomes for advanced pancreatic cancer patients through the use of a novel, small molecule therapeutic compound as a monotherapy or in combination with the current standard of care.

Next Steps

Patent 10,287,259 issued 5/14/2019. Continue preclinical activities, including formulation/dosing regimen to be used in vivo, PK/PD, tox and efficacy determination. Seeking licensing opportunities.



Invent Penn State is a Commonwealth-wide initiative to spur economic development, job creation, and student career success. Invent Penn State blends entrepreneurship-focused academic programs, business startup training and incubation, funding for commercialization, and university-community collaborations to facilitate the challenging process of turning research discoveries into valuable products and services that can benefit Pennsylvanians and humankind. Learn more at invent.psu.edu.

Penn State is an equal opportunity, affirmative action employer, and is committed to providing employment opportunities to all qualified applicants without regard to race, color, religion, age, sex, sexual orientation, gender identity, national origin, disability or protected veteran status.