The University of Texas Rio Grande Valley
Office of Technology Commercialization

4-(5-Fluoropyridin-2-yl)-2azetidinones to fight against drug-resistant pancreatic cancer

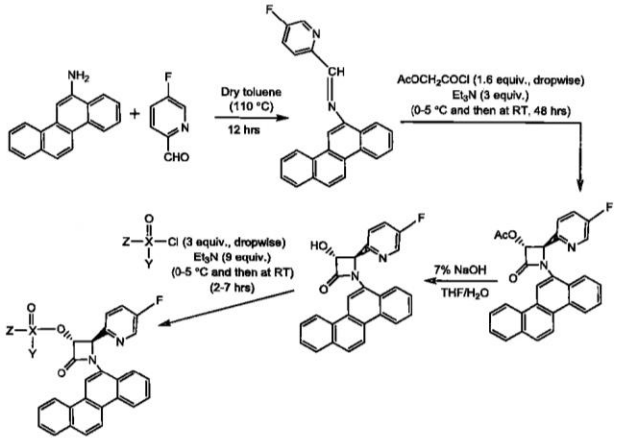
The present technology consists of compounds that demonstrate outstanding results against drug-resistant cancer cell lines.

Problem

Around 95% of pancreatic tumors are driven by mutations in KRAS gene, subbed "undruggable" and prevalent in 5 drug-resistant pancreatic cancers. Currently, there is no effective medicine in the market for drug-resistant cancers.

Solution

6 potent anti-pancreatic cancer 2-azetidinone molecules against drug-resistant cell lines were designed, validated *in silico,* synthesized through multi-step process, and conducted *in vitro* anti-pancreatic cancer evaluation *(2D-culture & 3D-tumorsphere formation assays).* The series consists of 12 small molecules.



Synthesis of 4-(5-Fluoropyridin-2-yl)-2-azetidinones

Value Proposition

- These derivatives of compounds show excellent cytotoxicity against drug-resistant pancreatic cancer cell lines (PANC-1 cells): Best IC50 values in 2D-culture and 3D-tumorsphere assays are 2.55 nM and 2.33 nM, respectively

Competitive Advantages

- 3 to 359 times more selective towards PANC-1 cells compared to normal pancreatic ductal epithelial cells
- Potential antibacterial and drug-resistant antibacterial activity against various types of infections

Status of Development

- Prototype is near commercial grade, and has been tested in an operational lab environment

IP Status

- Patent WO 2019227040
- Licensing Available

For further information regarding this Technology please contact:
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