



Autophagy Modulators For Use in Treating Cancer

Summary (1024-character limit)

Investigators from the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) have identified five autophagy-inhibiting compounds (WX8 family) through a high-throughput screening. The NICHD seeks licensees and/or co-development partners for methods to treat cancer by administering these autophagy-inhibiting compounds.

NIH Reference Number

E-003-2018

Product Type

- Therapeutics

Keywords

- Inhibition of Autophagy, WX8, BRAF Mutation, Eunice Kennedy Shriver National Institute of Child Health and Human Development, NICHD, Depamphilis

Collaboration Opportunity

This invention is available for licensing and co-development.

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Description of Technology

Cancer cells can upregulate autophagy – cell destruction – as a response to chemotherapy. Investigators in Dr. Melvin DePamphilis' laboratory at the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) have shown that compounds identified by screening a library of compounds blocks autophagy in some cancer cells (e.g., melanoma) but are not toxic to normal cells. Cancer cells with mutations in the BRAF oncogene are especially dependent on autophagy. Treatment of cancer cells with the BRAF mutation can increase the efficacy of chemotherapy. Proof of concept studies in xenograft mice showed reduction of melanoma tumor size upon treatment with WX8, a lead compound described in the patent application cited below. The technology is available for licensing and/or co-development under a collaborative research agreement.



Potential Commercial Applications

- Cancer therapeutic
- Administration of the compounds that inhibit autophagy can be used to sensitize cancer cells to chemotherapeutic agents

Competitive Advantages

- The compounds inhibiting autophagy are selective for cancer cells and are not toxic to normal cells

Inventor(s)

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Development Stage

- Pre-clinical (in vivo)

Publications

Sharma et al. A family of PIKFYVE inhibitors with therapeutic potential against autophagy-dependent cancer cells disrupt multiple events in lysosome homeostasis. [[PMID 30806145](#)]

Patent Status

- **U.S. Patent Filed:** U.S. Patent Application Number 16/883,406, Filed 26 May 2020

Related Technologies

- [E-138-2019 - Combined PIKFYVE and p38 MAP Kinase Inhibition for Treating Cancer](#)

Therapeutic Area

- Cancer/Neoplasm