

Modulating Chemotherapeutic Cytotoxicity

Summary (1024-character limit)

The NCI seeks partners interested in in-licensing or co-development collaboration on CD47-targeting therapeutics for cardioprotection and autophagy modulation.

NIH Reference Number

E-296-2011

Product Type

- Therapeutics

Keywords

- morpholino
- CD47

Collaboration Opportunity

This invention is available for licensing and co-development.

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Description of Technology

Many chemotherapeutic agents cause significant cytotoxicity to non-cancer ("normal") cells, resulting in undesirable side-effects and often limiting the dose and/or duration of chemotherapy that can be administered to a patient.

Investigators at the National Cancer Institute's [Laboratory of Pathology](#) have demonstrated that deficiency or blockade of the ubiquitously expressed receptor CD47 results in remarkable cell and tissue protection against ischemic and radiation stress. Antagonists of CD47 or its ligand THBS1/thrombospondin 1 enhance cell survival and preserve their proliferative capacity. The researchers found that using CD47-modulating compounds in combination with a chemotherapeutic agent increases the efficacy of that agent against inhibiting tumor growth. This discovery builds on previous discoveries of antibodies, antisense morpholino oligonucleotides, and peptide compounds that modulate CD47.

The results have been observed in mouse and pig models. Potential research collaborations could include clinical demonstration of effects.

Potential Commercial Applications

- Combination chemotherapy

Competitive Advantages

- Enhances effectiveness of chemotherapeutic agents while limiting off-target effects on normal tissue

Inventor(s)

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Development Stage

- Pre-clinical (in vivo)

Publications

[Soto-Pantoja, D. R. et al \[PMID: 22874555\]](#)

[Soto-Pantoja, D. R. et al \[PMID 23301159\]](#)

Patent Status

- **U.S. Patent Filed:** U.S. Patent Application Number PCT/US2014/025989

Related Technologies

- [E-227-2006 - Methods of preventing tissue ischemia](#)

Therapeutic Area

- Cancer/Neoplasm