

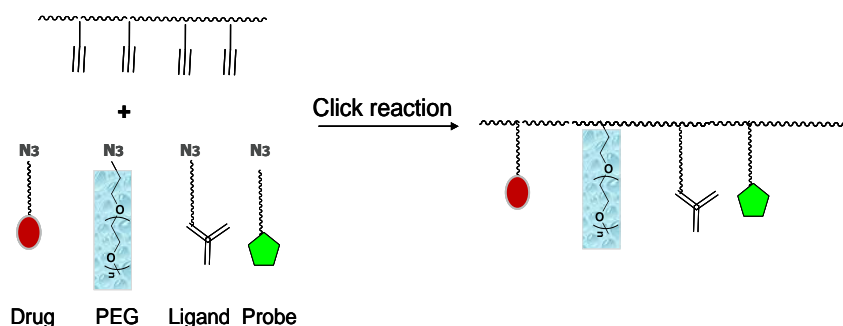
Clickable Polymers

A novel modular drug delivery platform

The technology

This technology presents a novel family of clickable oxetane-based polymers as a modular drug delivery platform. These polymer-drug conjugates are fast and easy to synthesize at low cost and allow for targeted drug release with improved therapeutic effect during drug delivery. The oxetane-based polymers are very versatile and can be used to improve delivery of various drugs and genetic constructs, which might be toxic or insoluble on their own. Using the Camptothecin (CPT) as a proof of concept, in vitro studies performed by VCU researchers have shown the quick uptake of the conjugate by the cells and its distribution into desired areas.

Furthermore, the oxetane-conjugated molecule was approximately 30 times less toxic than the unmodified one. This technology significantly improves the precision of controlled synthesis and provides a new means for the delivery system. In vitro data have demonstrated lower toxicity, better solubility and quicker uptake of modified therapeutics.



Benefits

- » Simple, fast, and cost-efficient synthesis
- » Versatile and flexible (can be used for various molecules)
- » Targeted drug release and improved therapeutic effect
- » Increased absorption and solubility
- » Biocompatible
- » Specific recognition of disease-related cell antigens or receptors

Applications

- » Drug delivery: controlled-release therapeutic properties
- » Gene delivery
- » Polymer synthesis

Patent status:

Patent issued: [US 9,421,276 B2](#)

License status:

This technology is available for licensing to industry for further development and commercialization.

Category:

Biomedical

VCU Tech #:

12-071

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External Resources:

[Zolotarskaya, O. Y., et al. \(2012\)](#)
[Zolotarskaya, O. Y., et al. \(2012\)](#)

Contact us about this technology

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