

Coating of Biological Entities with a Synthetic Layer and Their Triggered Release

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BACKGROUND

Oncolytic viruses can selectively replicate in and kill tumor cells. Over the last two decades significant advances have been made in the preclinical and clinical development of viral based therapy as a platform for the treatment of cancer. Much progress has since been made in understanding viral lifecycles and biology, but their delivery and clearance characteristics remain a major stumbling block for effective therapy. It is believed that the ability to effectively deliver therapeutic viruses systemically would leverage the existing knowledge base on viruses and expand the efficacy of the oncolytic viral platform to patients with disseminated disease.

TECHNOLOGY DESCRIPTION

University researchers have developed materials and methods for the encapsulation of biological entities with preservation of biological activity. In the invention, the entity is encapsulated in nanoparticle format. Said nanoparticle also has the ability to target the release of the biological through an external trigger and/or the incorporation of targeting moieties in the nanoparticle. Reduction to practice has been achieved in the form of biocompatible coatings for adenoviruses that can be easily functionalized. Coated viruses are shown to retain transduction ability and are protected from proteinase K and neutralizing antibodies. The coating is robust and the coated virus can be stored at -80C without loss in activity. The encapsulation approach can be adopted for a range of biocompatible materials. Applications would be in the field of biomedicine, specifically for viral therapy.

INTELLECTUAL PROPERTY INFO

This invention is available for research sponsorship and/or licensing.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Published Application	20190151253	05/23/2019	2013-122

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OTHER INFORMATION

KEYWORDS

oncolytic virus, viral therapy,
biocompatible coatings, encapsulation

CATEGORIZED AS

- **Medical**
- Delivery Systems
- Therapeutics

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