Super-Stable Encapsulated Gold Nanorods as Cancer Theranostics

Track Code: 66166

Categories:
- Biotechnology

Keywords:
- Biotechnology
- Cancer Therapy
- Chemical Engineering
- Imaging
- Medical Diagnostics
- Medical Imaging

Gold nanorods (GNR) have potential uses as imaging agents or in cancer treatments because of their ability to be tuned to absorb or scatter various types of light. Gold particles could be injected into the body near a tumor and then heated with a light source to selectively kill the cancer cells. Unfortunately, current fabrication techniques create GNRs that are cytotoxic and breakdown quickly in a saline solution.

To address this, researchers at Purdue University have developed a self-assembly process that encapsulates GNRs into block copolymer micelles. The resultant GNRs are stable against aggregation, even under physiological salt conditions, for indefinite periods of time. This method can be scaled up for mass production and can easily be extended to encapsulate and stabilize other nanoparticle agents.

Advantages:
- Stable for indefinite periods of time
- Can be scaled for mass production
- Encapsulate and stabilize other nanoparticle agents

Potential Applications
- Manufacturing
- Pharmaceuticals
- Medical/Healthcare

Related Publications:
DOI: 10.1021/am300198v.

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Intellectual Property:

Application Date: March 15, 2013
Type: Utility Patent
Country of Filing: United States
Patent Number: 9,782,499
Issue Date: October 10, 2017

Application Date: April 3, 2012
Type: Provisional-Patent
Country of Filing: United States
Patent Number: (None)
Issue Date: (None)

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