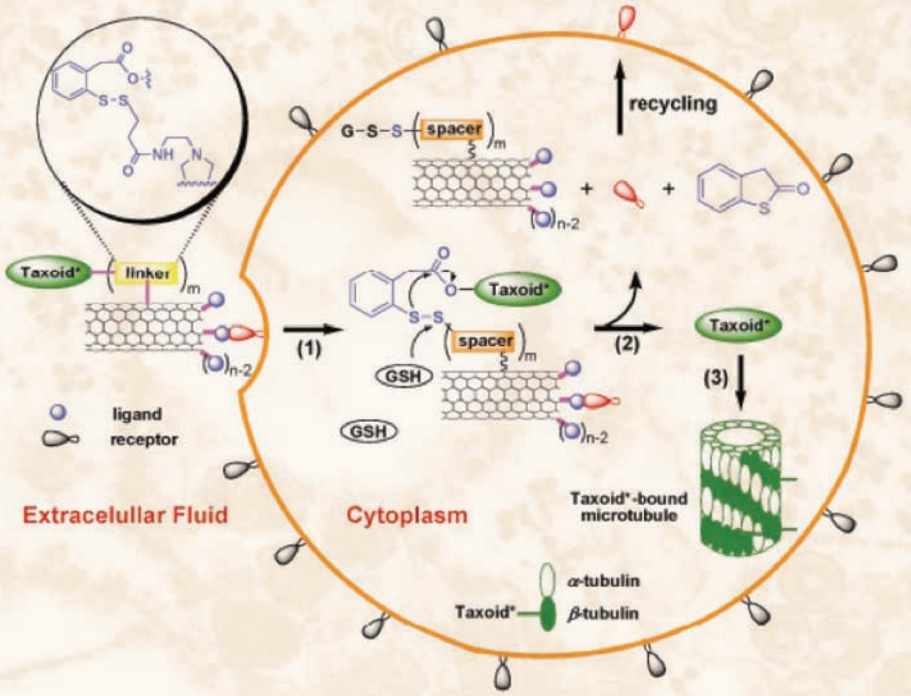
Carbon Nanotube – Based Drug Delivery Device



Technology

Describes a tumor-targeted drug carrier system containing single walled carbon nanotubes which are simultaneously functionalized with tumor cell receptors and with a prodrug that is activated to its cytotoxic formulation within the tumor cell.

Applications

The method can be used to develop functionalized carbon nanotube delivery system for diagnostics and therapeutic purposes.

Competitive Advantage

The advantages of using a carbon nanotube-assisted drug delivery system include efficient targeting and amplification of tumor-targeting due to an enhanced permeability and retention effect of the carbon nanotube which can be efficiently loaded with the drug. The use of a non-toxic prodrug which is activated to its cytotoxic form in the tumor cells helps preserve the non-targeted normal tissue of the patient, thereby potentially reducing the side effects resulting from the therapy.

Inventors

Jingyi Chen

Stanislaus S. Wong

Iwao Ojima

License Status

Available for Licensing

- Non-Exclusive
- Exclusive

Brookhaven National Laboratory

Kimberley Elcess
Office of Intellectual Property and Sponsored Research

PO Box 5000
Building 185
Upton, NY
11973-5000

Phone:
(631) 344-4151

Fax:
(631) 344-3729

Email address:
elcess@bnl.gov

BROOKHAVEN NATIONAL LABORATORY

Brookhaven National Laboratory is a multi-program national laboratory operated by Brookhaven Science Associates for the U.S. Department of Energy.