

Challenges on the Design of Next-generation Drug Nano-carriers for Precise Delivery

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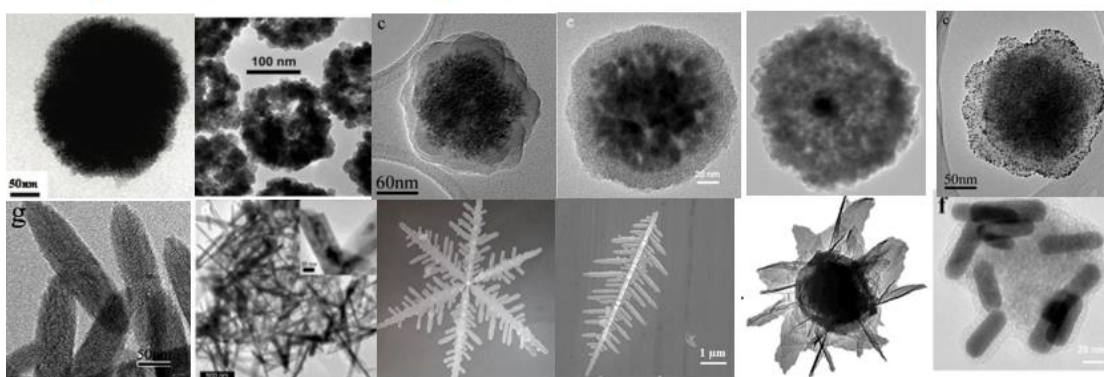
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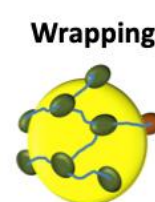
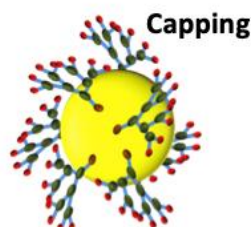
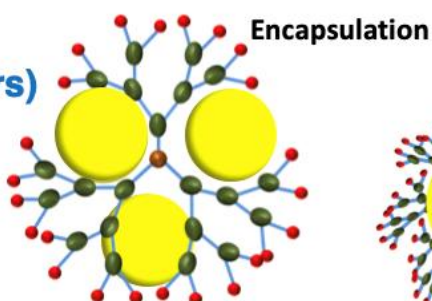
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Graphical Abstract

Inorganic (iron oxides, gold) Particles (10 to ~200 nm)



Organic
(dendrimers)
2-20 nm



Abstract

A series of inorganic (iron oxide and gold) and organic (dendrimer) nanomaterials were synthesized for studying their anticancer drug release profiles with normal, sustained, controlled (pH, ultrasound, small biomolecules), and smart/active releases. The in vitro and in vivo monitoring of these nanomaterials were conducted by magnetic resonance imaging, fluorescence imaging, and mass spectrometry imaging. Some of these nanomaterials were organ/tissue targeting in spleen, kidney, and epithelial.

Keywords: Dendrimer; drug delivery; iron oxide; gold; nanoparticle.

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Biography of Presenting Author



Ken Cham-Fai Leung is an Associate Professor at the Department of Chemistry, The Hong Kong Baptist University (HKBU), Hong Kong SAR, P. R. China. He concurrently holds the Honorary Associate Professorship at the Faculty of Dentistry, The University of Hong Kong (HKU). He is a Chartered Scientist (CSci), Chartered Chemist (CChem) of the Royal Society of Chemistry (United Kingdom) and a member in the State Key Laboratory of Environmental and Biological Analysis at HKBU. He was elected as a Founding Member of The Hong Kong Young Academy of Sciences (FMYASHK) in 2018 and named as a Fellow of the International Association of Advanced Materials (FIAAM, Sweden) in 2020. His research interests are in the field of supramolecular chemistry, organic materials catalysis, nanoscience, and nanomedicine.

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