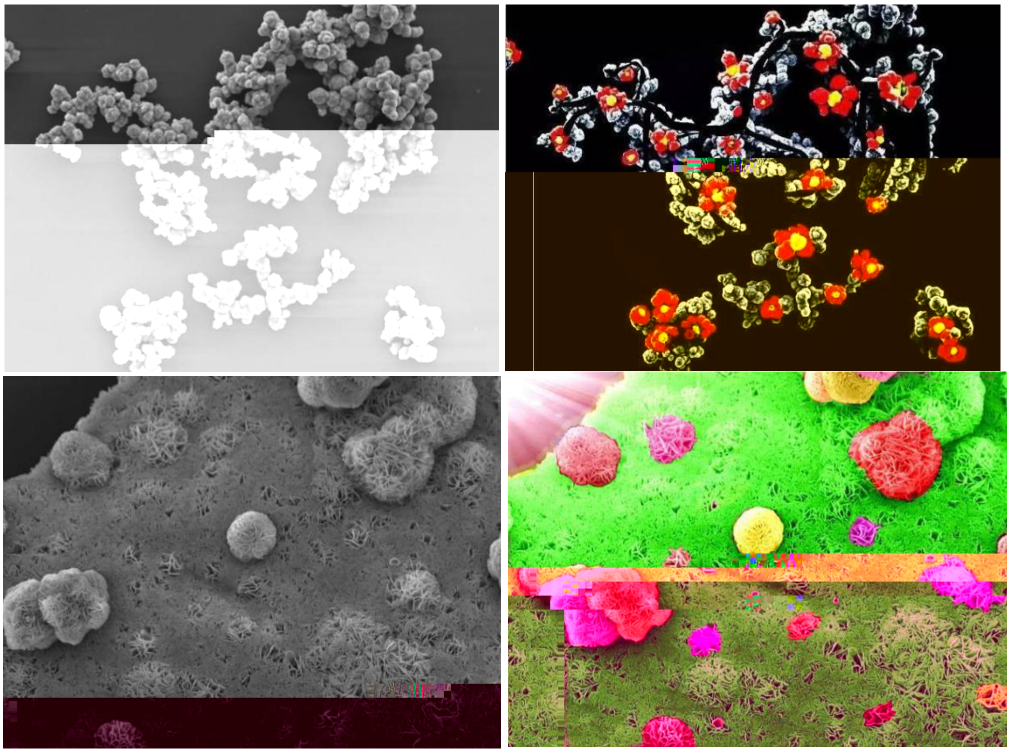

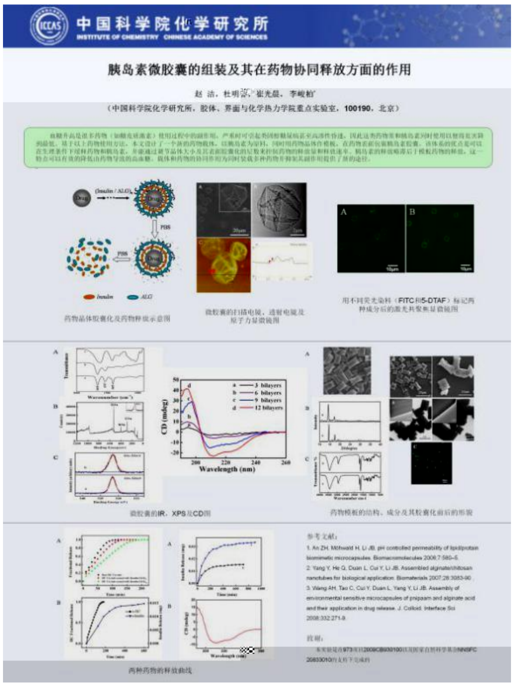
中国科学院化学研究所
INSTITUTE OF CHEMISTRY CHINESE ACADEMY OF SCIENCES

胰岛素微胶囊的组装及其在药物协同释放方面的作用

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药物晶体胶囊化及药物释放示意图

微胶囊的扫描电镜，透射电镜及原子力显微镜图

用不同荧光染料（FITC和5-DTAF）标记两种成分后的激光共聚焦显微镜图

微胶囊的IR，XPS及CD图

药物模板的结构、成分及其胶囊化前后的形貌

两种药物的释放曲线

参考文献：

1. An ZH, Möhwald H, Li JB. pH controlled permeability of lipid/protein biomimetic microcapsules. Biomacromolecules 2006;7:580–5.

2. Yang Y, He Q, Duan L, Cui Y, Li JB. Assembled alginate/chitosan nanotubes for biological application. Biomaterials 2007;28:3083-90.

3. Wang AH, Tao C, Cui Y, Duan L, Yang Y, Li JB. Assembly of environmental sensitive microcapsules of pnipaam and alginate acid and their application in drug release. J. Colloid. Interface Sci 2008;332:271-9.

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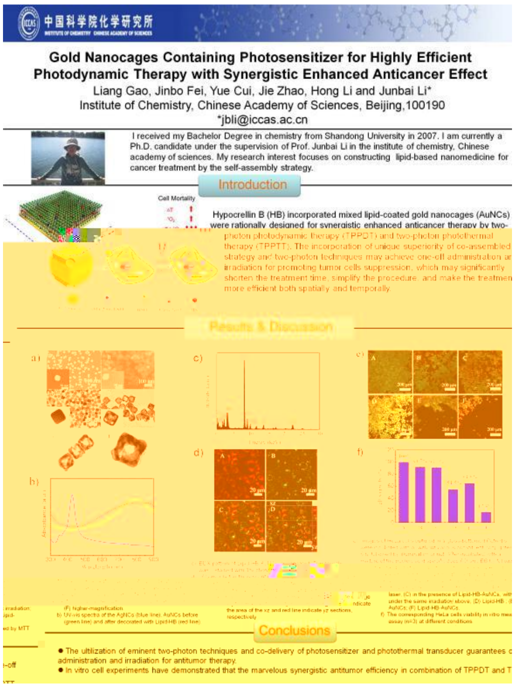
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Gold Nanocages Containing Photosensitizer for Highly Efficient Photodynamic Therapy with Synergistic Enhanced Anticancer Effect

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I received my Bachelor Degree in chemistry from Shandong University in 2007. I am currently a Ph.D. candidate under the supervision of Prof. Junbai Li in the institute of chemistry, Chinese academy of sciences. My research interest focuses on constructing lipid-based nanomedicine for cancer treatment by the self-assembly strategy.

Introduction

Hypocrellin B (HB) incorporated mixed lipid-coated gold nanocages (AuNCs) were rationally designed for synergistic enhanced anticancer therapy by two-photon photodynamic therapy (TPPDT) and two-photon photothermal therapy (TPPTT). The incorporation of unique superiority of co-assembled strategy and two-photon techniques may achieve one-off administration an irradiation for promoting tumor cells suppression, which may significantly shorten the treatment time, simplify the procedure, and make the treatmen more efficient both spatially and temporally.

Results & Discussion

irradiation;

lipid-

ed by MTT

(F) higher-magnification

b) UV-vis spectra of the AgNCs (blue line), AuNCs before (green line) and after decorated with Lipid-HB (red line).

indicate the area of the xz and red line indicate yz sections, respectively.

laser; (C) in the presence of Lipid-HB-AuNCs, with under the same irradiation above; (D) Lipid-HB; (E) AuNCs; (F) Lipid-HB-AuNCs.

f) The corresponding HeLa cells viability in vitro mea assay (n=3) at different conditions.

Conclusions

- The ultilization of eminent two-photon techniques and co-delivery of photosensitizer and photothermal transducer guarantees c administration and irradiation for antitumor therapy.
- In vitro cell experiments have demonstrated that the marvelous synergistic antitumor efficiency in combination of TPPDT and T

-off

MTT
