

Accepted Manuscript

Title: Vitamin E-based redox-sensitive salinomycin prodrug-nanosystem with paclitaxel loaded for cancer targeted and combined chemotherapy

Authors: De-Sheng Liang, Jian Liu, Tao-Xing Peng, Hui Peng, Feng Guo, Hai-Jun Zhong



PII: S0927-7765(18)30595-2
DOI: <https://doi.org/10.1016/j.colsurfb.2018.08.063>
Reference: COLSUB 9595

To appear in: *Colloids and Surfaces B: Biointerfaces*

Received date: 17-7-2018
Revised date: 27-8-2018
Accepted date: 28-8-2018

Please cite this article as: Liang D-Sheng, Liu J, Peng T-Xing, Peng H, Guo F, Zhong H-Jun, Vitamin E-based redox-sensitive salinomycin prodrug-nanosystem with paclitaxel loaded for cancer targeted and combined chemotherapy, *Colloids and Surfaces B: Biointerfaces* (2018), <https://doi.org/10.1016/j.colsurfb.2018.08.063>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

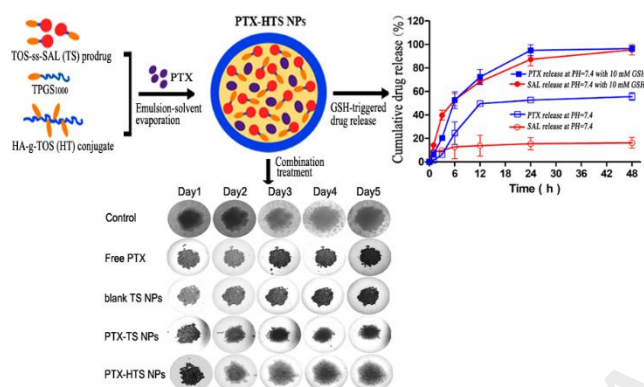
Vitamin E-based redox-sensitive salinomycin prodrug-nanosystem with paclitaxel loaded for cancer targeted and combined chemotherapy

De-Sheng Liang, Jian Liu, Tao-Xing Peng, Hui Peng, Feng Guo*, Hai-Jun Zhong*

School of Pharmacy, Nanchang University, 461 Bayi Road, Donghu District, Nanchang 330006, PR China

Corresponding author: Feng Guo, Hai-Jun Zhong; Tel. & Fax: +86-0791-86361839; E-mail address: guofeng198416@163.com; zhonghj@ncu.edu.cn;

Graphical Abstract



Highlights

- The TS prodrug conjugates were designed by covalently coupling the lipophilic TOS moiety to SAL via disulfide linkages.
- The TS prodrug conjugates were readily self-aggregated into stable nanoparticles.
- The TS prodrug nanoparticles were tumor-targeting and glutathione-sensitive.
- The TS prodrug nanoparticles were designed for synergistic salinomycin-paclitaxel combination chemotherapy

Abstract: Cancer stem cells (CSCs) can resist conventional chemotherapy to lead to cancer recurrence. For complete eradication of cancers, an effective CSCs therapeutic strategy should be developed to combine with conventional chemotherapy. In this work, a novel vitamin E-based redox-sensitive salinomycin (SAL, an inhibitor for CSCs) prodrug nanoparticles (TS NPs) and hyaluronic acid (HA)-coated TS NPs (HTS NPs) were fabricated to deliver paclitaxel (PTX) for cancer-targeted and combined chemotherapy. Both TS and HTS prodrug NPs had mean diameter of about 200 nm with uniform size distribution, excellent drug loading capacity for PTX, and glutathione-triggered SAL and PTX release profiles. The HTS prodrug NPs had enhanced cellular uptake efficiency over TS NPs due to CD44 receptor-mediated endocytosis, hence exerting stronger potency of SAL upon CSCs-enriched mammospheres formation and G₀/G₁ cell phase arresting. Cytotoxicity and 3D tumor

Download English Version:

<https://daneshyari.com/en/article/9952500>

Download Persian Version:

<https://daneshyari.com/article/9952500>

[Daneshyari.com](https://daneshyari.com)