

Accepted Manuscript

RVG29-modified Docetaxel-loaded nanoparticles for brain-targeted glioma therapy

Hongchen Hua, Xuemei Zhang, Hongjie Mu, Qingqing Meng, Ying Jiang, Yiyun Wang, Xiaoyan Lu, Aiping Wang, Sha Liu, Yaping Zhang, Zhihui Wan, Kaixiang Sun

PII: S0378-5173(18)30175-3
DOI: <https://doi.org/10.1016/j.ijpharm.2018.03.028>
Reference: IJP 17371

To appear in: *International Journal of Pharmaceutics*

Received Date: 1 November 2017
Revised Date: 8 March 2018
Accepted Date: 15 March 2018

Please cite this article as: H. Hua, X. Zhang, H. Mu, Q. Meng, Y. Jiang, Y. Wang, X. Lu, A. Wang, S. Liu, Y. Zhang, Z. Wan, K. Sun, RVG29-modified Docetaxel-loaded nanoparticles for brain-targeted glioma therapy, *International Journal of Pharmaceutics* (2018), doi: <https://doi.org/10.1016/j.ijpharm.2018.03.028>

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.



RVG29-modified Docetaxel-loaded nanoparticles for brain-targeted glioma therapy

Hongchen Hua¹, Xuemei Zhang², Hongjie Mu¹, Qingqing Meng¹, Ying Jiang¹, Yiyun Wang¹, Xiaoyan Lu¹, Aiping Wang¹, Sha Liu¹, Yaping Zhang³, Zhihui Wan³, Kaoxiang Sun^{1*}

¹School of Pharmacy, Collaborative Innovation Center of Advanced Drug Delivery System and Biotech Drugs in Universities of Shandong, Key Laboratory of Molecular Pharmacology and Drug Evaluation (Yantai University), Ministry of Education, Yantai University, Yantai 264005 (P.R. China)

²State Key Laboratory of Long-acting and Targeting Drug Delivery System, Yantai, Shandong Province, People's Republic of China

³School Hospital of Yantai University, Shandong Province, People's Republic of China

*Corresponding author:

Dr. Kaoxiang Sun

Tel: +86-535-3808266

Fax: +86-535-6706066

Email: sunkx@ytu.edu.cn

Abstract

Gliomas are the most common malignant brain tumor, but treatment is limited by the blood-brain barrier (BBB), especially for chemotherapeutic drugs. Although some chemotherapy drugs can pass through the BBB, many of these agents are toxic to normal brain tissue. To maximize therapeutic effects, chemotherapeutic drugs must accumulate at the glioma site. In this study, a specific ligand (the RVG29 peptide) that can combine with acetylcholine receptors was conjugated to polyethylene glycol-modified poly-(D,L-lactide-co-glycolide) (PEG-PLGA) to develop a targeted carrier; preparation of the targeted docetaxel nanoparticles (DTX-NPs) was performed by the nanoprecipitation method. The NPs were approximately 110 nm and had smooth surfaces. Enzyme-linked immunoassay results showed that the amount of receptor on the surface of glioma cells was 2.04-fold higher than that of nonmalignant cells, which may promote accumulation of RVG29-modified NPs at the targeting site. NPs showed targeting properties for glioma cells

Download English Version:

<https://daneshyari.com/en/article/8519999>

Download Persian Version:

<https://daneshyari.com/article/8519999>

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