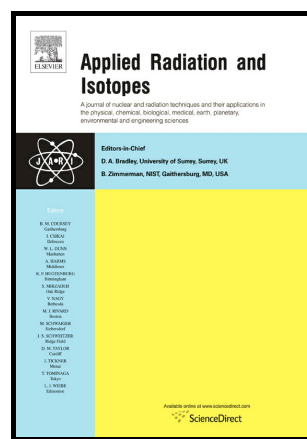


Author's Accepted Manuscript

Synthesis, characterization and radiolabeling of folic acid modified nanostructured lipid carriers as a contrast agent and drug delivery system

Eser Ucar, Serap Teksoz, Cigdem Ichedef, Ayfer Yurt Kilcar, E. Ilker Medine, Kadir Ari, Yasemin Parlak, B. Elvan Sayit Bilgin, Perihan Unak



PII: S0969-8043(16)30896-X
DOI: <http://dx.doi.org/10.1016/j.apradiso.2016.11.002>
Reference: ARI7641

To appear in: *Applied Radiation and Isotopes*

Received date: 17 March 2016
Revised date: 7 September 2016
Accepted date: 1 November 2016

Cite this article as: Eser Ucar, Serap Teksoz, Cigdem Ichedef, Ayfer Yurt Kilcar, E. Ilker Medine, Kadir Ari, Yasemin Parlak, B. Elvan Sayit Bilgin and Perihan Unak, Synthesis, characterization and radiolabeling of folic acid modified nanostructured lipid carriers as a contrast agent and drug delivery system: *Applied Radiation and Isotopes* <http://dx.doi.org/10.1016/j.apradiso.2016.11.002>

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 galley proof before it is published in its final citable 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.

Synthesis, characterization and radiolabeling of folic acid modified nanostructured lipid carriers as a contrast agent and drug delivery system

Eser Ucar¹, Serap Teksoz^{1*}, Cigdem Ichedef¹, Ayfer Yurt Kilcar¹, E. Ilker Medine¹, Kadir Ari¹, Yasemin Parlak², B. Elvan Sayit Bilgin², Perihan Unak¹

¹Department of Nuclear Applications, Institute of Nuclear Sciences Ege University, Bornova, 35100 İzmir, Turkey

²Department of Nuclear Medicine, School of Medicine, Celal Bayar University, Manisa

*Corresponding author. tel: +90-232-3113466, fax: +90-232-3886466. e-mail: serap.teksoz@ege.edu.tr

ABSTRACT

Nanostructured lipid carriers (NLCs) are the new generation of solid lipid drug delivery systems. Their suitability as contrast agents for gamma scintigraphy is an attracting major attention. The aim of current study was to prepare surface modified nanostructured lipid carrier system for paclitaxel (PTX) with active targeting and imaging functions. In accordance with the purpose of study, PTX loaded nanostructured lipid carriers (NLCs) prepared, modified with a folate derivative and radiolabeled with technetium-99m tricarbonyl complex ($^{99m}\text{Tc}(\text{CO})_3^+$). Cellular incorporation ratios of radiolabeled nanoparticles ($^{99m}\text{Tc}(\text{CO})_3\text{-PTX-NLC}$) were investigated *in vitro* on three cancer cell lines. Additionally *in vivo* animal studies conducted to evaluate biological behavior of $^{99m}\text{Tc}(\text{CO})_3\text{-PTX-NLC}$ on female Wistar Albino rats. Biodistribution results showed that the folate derivative modified $^{99m}\text{Tc}(\text{CO})_3\text{-PTX-NLC}$ had considerably higher uptake in folate receptor positive organs. The data obtained from present study could be useful in the design of biodegradable drug carriers of PTX and folate receptor based tumor imaging agents.

Download English Version:

<https://daneshyari.com/en/article/5497730>

Download Persian Version:

<https://daneshyari.com/article/5497730>

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