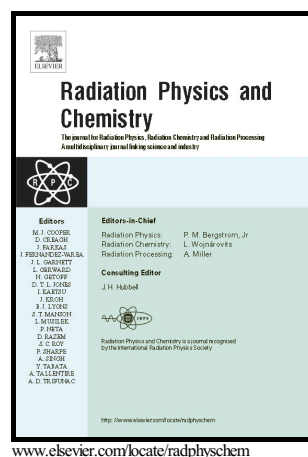


Author's Accepted Manuscript

Green synthesis of silver nanoparticles aimed at improving theranostics

José Vedelago, Cesar G. Gomez, Mauro Valente, Facundo Mattea



PII: S0969-806X(17)30994-5
DOI: <https://doi.org/10.1016/j.radphyschem.2018.01.001>
Reference: RPC7731

To appear in: *Radiation Physics and Chemistry*

Received date: 22 September 2017
Revised date: 6 December 2017
Accepted date: 2 January 2018

Cite this article as: José Vedelago, Cesar G. Gomez, Mauro Valente and Facundo Mattea, Green synthesis of silver nanoparticles aimed at improving theranostics, *Radiation Physics and Chemistry*, <https://doi.org/10.1016/j.radphyschem.2018.01.001>

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.

Green synthesis of silver nanoparticles aimed at improving theranostics

José Vedelago^{a,b,*}, Cesar G. Gomez^{c,d}, Mauro Valente^{a,b,e}, Facundo Mattea^{b,c,d}

^a*Instituto de Física Enrique Gaviola (IFEG), CONICET, Córdoba, Argentina.*

^b*Laboratorio de Investigación e Instrumentación en Física Aplicada a la Medicina e Imágenes por Rayos X, FaMAF-UNC, Córdoba, Argentina.*

^c*Dpto. de Química Orgánica, FCQ-UNC, Córdoba, Argentina.*

^d*Instituto de Investigación y Desarrollo en Ingeniería de Procesos y Química Aplicada (IPQA), CONICET, Córdoba, Argentina.*

^e*Centro de Física e Ingeniería en Medicina - CFIM & Departamento de Ciencias Físicas, Universidad de La Frontera, Temuco, Chile.*

Abstract

Nowadays, the combination of diagnosis and therapy, known as theranostics, is one of the keys for an optimal treatment for cancer diseases. Theranostics can be significantly improved by incorporating metallic nanoparticles that are specifically delivered and accumulated in cancerous tissue. In this context, precise knowledge about dosimetric effects in nanoparticle-infused tissues as well as the detection and processing of emerging radiation are extremely important issues. In the last years the first studies on theranostic nanomaterials in gel dosimetry have been presented but there is still a broad field of study to explore. Most of gel dosimetric materials are extremely sensible to modifications in their composition, the addition of enhancers, metallic or inorganic charges can alter their stability and dosimetric properties; therefore, thorough studies must be made before the incorporation of any type of modifier. In this work, the synthesis of metallic nanoparticles suitable for gel dosimetry for x-ray applications is presented. A green synthesis process of silver nanoparticles coated with porcine skin gelatin by thermal reduction of silver nitrate is presented.

*Corresponding author

Email address: jvedelago@famaf.unc.edu.ar (José Vedelago)

URL: www.liifamirx.famaf.unc.edu.ar/members/vedelago/ (José Vedelago)

Download English Version:

<https://daneshyari.com/en/article/8251429>

Download Persian Version:

<https://daneshyari.com/article/8251429>

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