







Home ► All Journals ► Nanotoxicology ► List of Issues ► Volume 7, Issue 1 ► NIST gold nanoparticle reference materia ....

Nanotoxicology > Volume 7, 2013 - Issue 1

374 | 46 | 2

Views CrossRef citations to date Altmetric

Research Article

# NIST gold nanoparticle reference materials do not induce oxidative DNA damage

Bryant C. Nelson ☑, Elijah J. Petersen, Bryce J. Marquis, Donald H. Atha, John T. Elliott, Danielle Cleveland, ...show all

Pages 21-29 | Received 23 May 2011, Accepted 09 Sep 2011, Published online: 02 Nov 2011



Full Article

Figures & data

References

Supplemental

**66** Citations

Metrics

➡ Reprints & Permissions

Read this article

#### Abstract

#### One primary challenge in nanotoxicology studies is the lack of well-characterised

nanopar nanopar develope genotox DNA dar oxidation

We Care About Your Privacy

We and our 842 partners store and/or access information on a device, such as unique IDs in cookies to process personal data. You may accept or manage your choices by clicking below, including your right to object where legitimate interest is used, or at any time in the privacy policy page. These choices will be signaled to our partners and will not affect browsing data. <a href="Privacy Policy">Privacy Policy</a>

We and our partners process data to provide:

Use precise geolocation data. Actively scan device characteristics for identification. Store and/or access information on a device. Personalised advertising and content, advertising and content measurement, audience research and services development.

List of Partners (vendors)

e I Accept VIST) has 10 nm). The Essential Only hymus DNA.

Show Purpose nt of four 2'2'Significantly up to 0.2 onance

ve as

vivo

deoxyad elevatec µg/ml, a

spectros

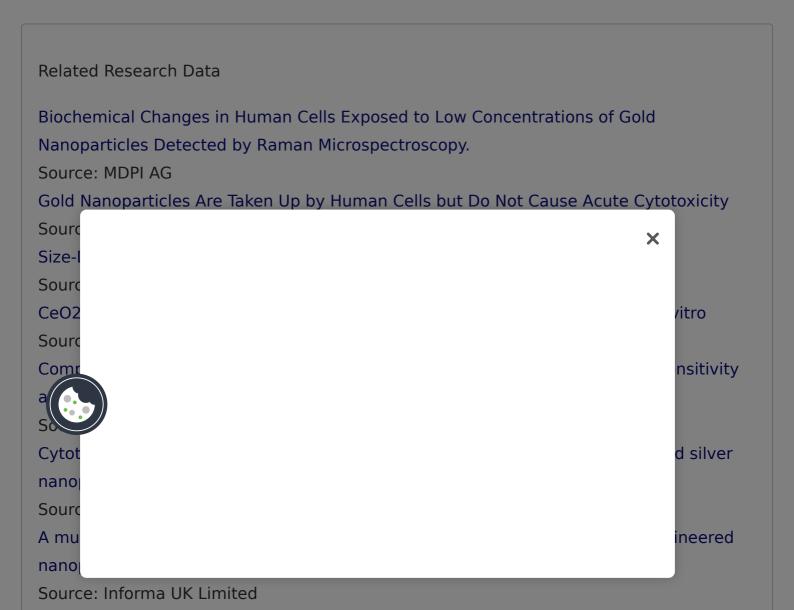
suitable

genotoxicity studies. NIST AuNPs thus hold substantial promise for improving the reproducibility and reliability of nanoparticle genotoxicity studies.

Q Keywords:: DNA damage genotoxicity gold nanoparticles mass spectrometry reference materials

## Acknowledgements

The authors acknowledge and thank Miral Dizdaroglu of NIST for his scientific advice and assistance with the DNA damage data interpretation. The authors would like to thank Teresa Butler, Vince Hackley, Stephen E. Long and Michael Winchester of NIST for providing the AuNP RMs for the reported experiments and/or for helping to characterise the RMs in the calf-thymus DNA incubation samples. In addition, we would like to thank Alessandro Tona of NIST for culturing the HepG2 cells for the 24 h DNA damage portion of the study.



The suitability of different cellular in vitro immunotoxicity and genotoxicity methods for the analysis of nanoparticle-induced events

Source: Informa UK Limited

The role of nanotechnology in tackling global water challenges

Source: Springer Science and Business Media LLC

Oxidative stress contributes to gold nanoparticle-induced cytotoxicity in human tumor cells.

Source: Informa UK Limited

Lung inflammation and genotoxicity following pulmonary exposure to nanoparticles in

ApoE-/- mice

Source: Springer Science and Business Media LLC

Use of human-derived liver cell lines for the detection of environmental and dietary genotoxicants; current state of knowledge.

Source: Elsevier BV

Principles for characterizing the potential human health effects from exposure to nanomaterials: elements of a screening strategy.

Source: Springer Science and Business Media LLC

8,5'-Cyclopurine-2'-deoxynucleosides in DNA: mechanisms of formation, measurement, repair and biological effects.

Source: Elsevier BV

Adverse effects of citrate/gold nanoparticles on human dermal fibroblasts.

Source: Wiley

Determining what really counts: modeling and measuring nanoparticle number

concentrations

Source: Royal Society of Chemistry (RSC)

Fourier transform infrared spectroscopy to assess molecular-level changes in micro X Sourc Induc Source :helial Nano cells articles Sourc Epige Sourc 8-Hyd tro DNA synth

Source: Oxford University Press (OUP)

Complete release of (5'S)-8,5'-cyclo-2'-deoxyadenosine from dinucleotides, oligodeoxynucleotides and DNA, and direct comparison of its levels in cellular DNA with other oxidatively induced DNA lesions

Source: Oxford University Press (OUP)

Free radical-induced damage to DNA: mechanisms and measurement.

Source: Elsevier BV

Linking provided by Schole plorer

### Related research 1

d research

People also read

Recommended articles

Cited by 46

Oxidative stress contributes to gold nanoparticle-induced cytotoxicity in human tumor cells >

Diego Mateo et al.

Toxicology Mechanisms and Methods Published online: 16 Dec 2013



Information for Open access **Authors** Overview R&D professionals Open journals Editors **Open Select** Librarians **Dove Medical Press** Societies F1000Research Opportunities Help and information Reprints and e-prints Advertising solutions Newsroom Accelerated publication Corporate access solutions Books Keep up to date Register to receive personalised research and resources by email Sign me up Taylor & Francis Group Copyright © 2024 Informa UK Limited Privacy policy Cookies Terms & conditions Accessib X

