2022

Rare Earth Metallosis: Gadolinium-rich Nanoparticle Formation from Magnetic Resonance Imaging Contrast Agents in Rodent and Human Kidney

Joshua DeAguero
Kidney Institute of New Mexico, University of New Mexico Health Science Center, University of New Mexico Health Science Center, New Mexico Veterans Administration Health Care System, joshdeaguero@salud.unm.edu

Tamara Howard
University of New Mexico Health Science Center, thoward@salud.unm.edu

Donna Kusewitt
University of New Mexico Health Science Center, dkusewitt@salud.unm.edu

Adrain J. Brearley Dr.
University of New Mexico, Department of Earth & Planetary Science, brearley@unm.edu

Abdul-Mehdi S. Ali
University of New Mexico, Department of Earth & Planetary Science, mehdiali@unm.edu

See next page for additional authors
Follow this and additional works at: https://digitalrepository.unm.edu/kinm

Creators

Joshua DeAguero, Tamara Howard, Donna Kusewitt, Adrain J. Brearley Dr., Abdul-Mehdi S. Ali, James H. Degnan, John Watt, G Patricia Escobar, Karol Dokladny, and Brent Wagner

Title: Rare Earth Metallosis: Gadolinium-rich Nanoparticle Formation from Magnetic Resonance Imaging Contrast Agents in Rodent and Human Kidney

Authors: Joshua DeAguero[1,2,3], Tamara Howard[2], Donna Kusewitt[2], Adrian Brearley[4], Abdul-Mehdi Ali[4], James H. Degnan[5], Stephen Jett[6], John Watt[7], G. Patricia Escobar[1,2,3], Karol Dokladny[1,2,3], Brent Wagner [1,2,3]

[1]Kidney Institute of New Mexico, University of New Mexico Health Science Center
[2]University of New Mexico Health Science Center
[3]New Mexico Veterans Administration Health Care System
[4]University of New Mexico, Department of Earth & Planetary Science
[5]University of New Mexico, Department of Mathematics and Statistics
[6]Chan Zuckerberg Initiative, National Cancer Institute, Center for Integrated Nanotechnologies, Sandia National Laboratories
[7]Center for Integrated Nanotechnologies, Los Alamos National Laboratory

Description/Summary: Energy dispersive X-ray spectroscopy (XEDS) datasets for the forthcoming publication "Rare Earth Metallosis: Gadolinium-rich Nanoparticle Formation from Magnetic Resonance Imaging Contrast Agents in Rodent and Human Kidney". Elemental counts for data represented in **Figure 3**, **Figure 4**, **Figure 5C**, **Figure 6**, **Figure 7D**, and **Figure 8**. XEDS analysis was performed using the JEOL 2010F FEGSTEM 200 kV transmission electron microscope, with Oxford Analytical AZTec X-ray energy-dispersive spectroscopy system, equipped with an XMax 80N 80mm^2 silicon drift detector, the FEI Tecnai G(2) F30 S-Twin 300kV transmission electron microscope equipped with Fischione Instruments HAADF STEM detectors or the JEOL NEOARM 200 kV Aberration Corrected scanning transmission microscope equipped with two JEOL 100 mm2 EDS detectors controlled by Oxford Instruments AZTec software.

Keywords: gadolinium; metals; gadodiamide; trace elements; magnetic resonance imaging contrast; renal tubular epithelium; renal proximal tubules; mitochondriopathy; electron microscopy; x-ray spectra

Publication Data: 2022

File Format: