



Glenn T. Seaborg Center Seminar

Biomimetic Actinide Chelators: A Perspective on the Characterization and Preclinical Development of Orally Active Decorporation Agents

*Rebecca J Abergel
Chemical Sciences Division,
Lawrence Berkeley National Laboratory*

**Wednesday, September 9, 2009
4:00 - 5:00 pm
Building 70A, Room 3377**

The threat of a dirty bomb or other major radiological contamination presents a danger of large-scale radiation exposure of the population. Because major components of such contamination are likely to be actinides, actinide decorporation treatments that will reduce radiation exposure must be a priority. Current therapies for the treatment of radionuclide contamination are limited and extensive efforts must be dedicated to the development of therapeutic, orally bioavailable, actinide chelators for emergency medical use.

Using a biomimetic approach based on the similar biochemical properties of plutonium(IV) and iron(III), siderophore-inspired multidentate hydroxypyridonate ligands have been designed and are unrivaled in terms of actinide-affinity, selectivity and efficiency. A perspective on the characterization and preclinical development of two hydroxypyridonate actinide decorporation agents, 3,4,3-LI(1,2-HOPO) and 5-LIO(Me-3,2-HOPO), will be presented.