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Piano Nazionale di Ripresa e Resilienza
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«Progetti di Ricerca di Rilevante Interesse Nazionale»

Title of the project

Design of paramagnetic metal complexes for improved MRI-guided drug-release applications

Scientific Investigator

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Abstract

This project focuses on developing new paramagnetic metal complexes to enhance MRI-guided theranostic approaches for monitoring drug release from smart liposomal nanocarriers. These nanocarriers release drugs in response to specific stimuli, and co-encapsulated MRI agents allow real-time, non-invasive visualization of drug release. To improve detection sensitivity, the project will design neutral metal complexes (Gd(III) and Mn(II)-based) with high relaxivity upon release. The agents will be evaluated for encapsulation efficiency, biocompatibility, and in vivo performance in a mouse breast cancer model.



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