



Long-Lived Gadolinium-Based Agents for Tumor Imaging and Therapy

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing gadolinium-labeled alkylphosphocholine analogs to detect and treat cancerous tumors.

Overview

Currently, there are no long-lived CT or magnetic resonance (MR) imaging agents that successfully target tumor cells *in vivo*. While a variety of radiopharmaceuticals are available, these are limited by non-specificity for malignancy, inability to distinguish cancer from inflammation, short biological half-life and generally poor spatial resolution associated with PET and SPECT scanning modalities.

There remains a need for a tumor-specific contrast agent to detect, locate and treat solid tumor cancers. Such an agent would represent a tenfold improvement in the spatial resolution currently attainable with positron emission agents and PET scanning.

The Invention

UW-Madison researchers have synthesized the first long-lived tumor-specific contrast agents for general broad spectrum tumor imaging and characterization. The new, gadolinium (Gd)-labeled analogs utilize an alkylphosphocholine carrier backbone. Their formulation properties render them suitable for injection while retaining tumor selectivity.

Applications

- Improved contrast agent for MR imaging and CT
- The novel compounds may be ideal neutron capture therapy agents since they exhibit malignant tumor selectivity and unparalleled properties (^{157}Gd has the highest thermal neutron cross section of any stable nucleotide, i.e., 25900 barn which is eight times that of boron).

Key Benefits

- Long lived and tumor specific
- Can readily be applied to clinical therapeutic and imaging applications

Stage of Development

The researchers have demonstrated successful *in vivo* MR imaging of a tumor using Gd-NM404 as the contrast agent. MR imaging of the tumor was significantly enhanced by 24 hours post injection.

Results indicate that the differential uptake and retention of alkylphosphocholine analogs is maintained for the Gd-labeled compounds of the present invention. cookies, you agree to the storing of cookies and related technologies on your device. [See our privacy policy.](#)

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Additional Information

For More Information About the Inventors

- [Jamey Weichert](#)

Related Intellectual Property

- [View Continuation Patent in PDF format.](#)

Tech Fields

- [Medical Imaging : MRI](#)

For current licensing status, please contact Rafael Diaz at rdiaz@warf.org or 608-960-9847

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