

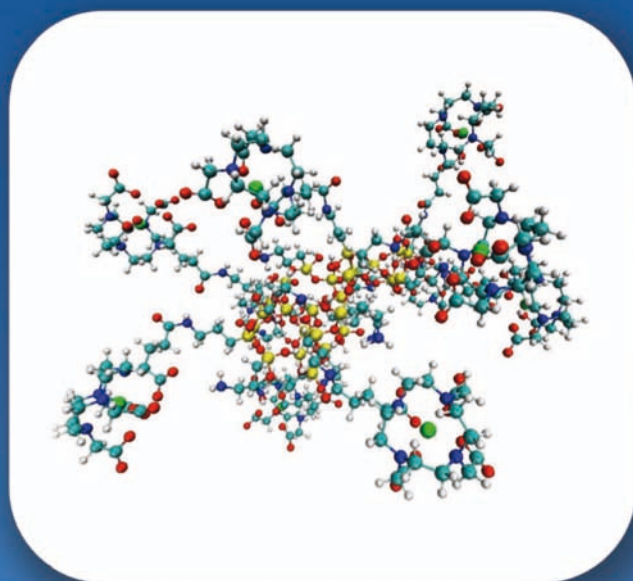
CheMatech
macrocycle design technologies



Gado-H[®]

Preclinical MRI Gd probes for cellular labeling

*Paramagnetic multimodal hybrid sub-5 nm particles
High efficient T1 MRI Cell Tracking*



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An innovative Gadolinium nanoprobe



Cell labeling

*Stem Cells,
Lymphocytes,
Dendritic cells,
Fibroblastes,
Macrophages,
Tumors cells,
etc...*

Freeze dried

Easy handling and ready to use

Storage

Stable for months

Reproducible synthesis

Since 2004 in Nanosynthesis business

Simple labeling process

No cytotoxicity, no impact on Stem Cell differentiation

Ultrasmall size

4 ± 1 nm

Polysiloxane and Gadolinium chelates platform

High Gd loading Gd/Si >0.2

Low biological interferences

High colloidal stability in biological buffer

Multilabeling access

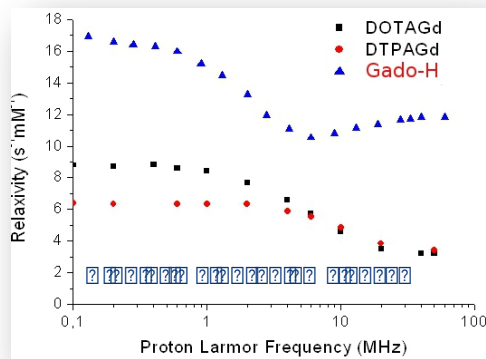
- fluorescence,
- nuclear imaging

High relaxivity

$>10 \text{ mmol}^{-1} \cdot \text{s}^{-1}$ per Gd^{3+} (1.4T)

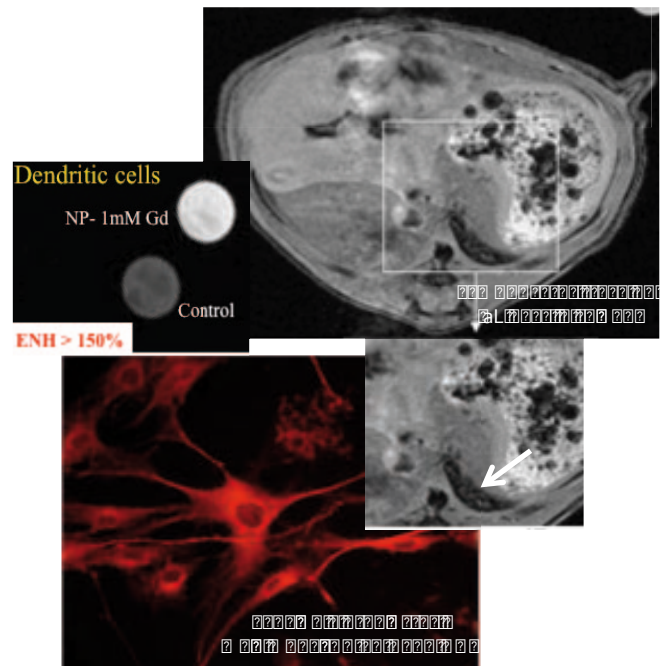
An efficient multimodal probe

High T1 MRI efficiency



Modular cell internalization

- Modifiable charge surface
- Hydrophilic/hydrophobic balance
- Long term stability



Ready for medical applications

- **High sensitivity**
In vivo detection with less than 5000 cells/cm³
- **Quantitative method**
- **Implementable in routine clinical practice**
No need of new MRI sequences

Patented Technology

- Basic gadolinium based particles
- Multilabeled particles
- Possibility of custom manufacturing of biolabeled targeting particles

Hybrid Gadolinium Oxide Nanoparticles: Multimodal Contrast Agents for in Vivo Imaging

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Ultrasmall Rigid Particles as Multimodal Probes for Medical Applications

François Lux, Anna Mignot, Pierre Mowat, Cédric Louis, Sandrine Dufort, Claire Bernhard, Franck Denat, Frédéric Boschetti, Claire Brunet, Rodolphe Antoine, Philippe Dugourd, Sophie Laurent, Luce Vander Elst, Robert Muller, Lucie Sancey, Véronique Josserand, Jean-Luc Coll, Vasile Stupar, Emmanuel Barbier, Chantal Rémy, Alexis Broisat, Catherine Ghezzi, Géraldine Le Duc, Stéphane Roux, Pascal Perriat, and Olivier Tillement*

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