PATENT

NANOVESICLES AND USE THEREOF IN MEDICAL DIAGNOSIS

The Need

Since the use of contrast agents (CAs) is mandatory for the correct diagnosis of many diseases, and Gd-based CAs are not as safe as they have been considered historically, it is critical to find suitable alternative imaging probes with the same or even better paramagnetic properties than current Gd-based CAs.

The Solution

A new type of paramagnetic metal free CAs for magnetic resonance imaging (MRI) as a novel alternative to metal-based CAs, for use in a method of diagnosis “in vivo”.

Innovative Aspects

Metal free

Great capacity to generate contrast (relaxivity) per nanoparticle

Achieved a relaxivity of ca. 13 $mM^{-1}s^{-1}$, significantly surpass the relaxivity of a standard Gd-based contrast agent

Monodisperse quatsome (QS) nanovesicles

High quantity of radical molecules per particle

High compatibility in water

Highly stable

Simple preparation

No toxicity

In mice, better tumor imaging than standard Gd-based contrast agents

Stage of Development: Research and development

Intellectual Property

European patent application (Priority date: November 28, 2025)

Suitable for international extension (PCT application)

Available for:

- **Licensing**
- **Further development**

Contact details

fsantos@ciber-bbn.es

www.ciber-bbn.es