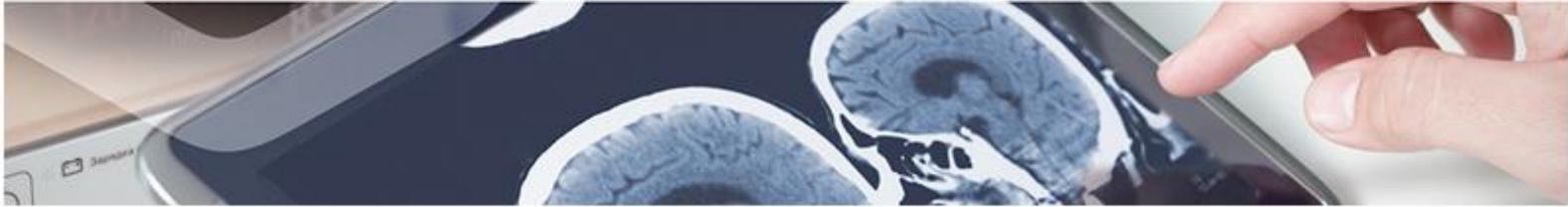


Medical Devices

New phantom for nuclear magnetic resonance spectroscopy

A research group of the Public Health System of Andalusia (SSPA) has developed a phantom for nuclear magnetic resonance spectroscopy that enables the analysis, adjustment and the quantification of various parameters implied in the spectroscopy process.



Description

Proton magnetic resonance spectroscopy is a metabolic imaging technique for in vivo measuring of the levels of various metabolites. The technology is in continuous development with demonstrable improvements in diagnostic and therapeutic rates, as it enables: the differential diagnoses between lesions; the pre-surgical tumour grading; the very early detection of a lesion; the definition of the process and the assessment of the possible effects derived from the treatment.

There are currently no phantoms designed specifically for spectroscopy; those that exist are designed for the quality control of nuclear magnetic resonance systems. Although some phantoms have been designed in simple geometric shapes and filled with a saline solution, they only measure the consistency of a solution's spectrum or the spatial location of a single point or region, and only analyse one or two parameters among all those that could vary: concentration, size, spatial location and metabolic ones.

The new phantom developed enables the various parameters involved in the spectroscopic process to be analysed and adjusted, facilitating their quantification. This allow the definition of tumour volumes that require different activity levels for a better-targeted therapy. The phantom has been designed based on characteristics according to the parameters desirable to be measured.



Advantages

This new phantom and the way it is used allows us to evaluate, not only the quality parameters involved, but also the status of the MRI equipment and any uncertainties surrounding it or its analysis software. This enables us to optimize the technique, to improve the analysis of results and be alerted to any anomalies, as well as

detecting any error in the generation and capture of the spectrum. In conclusion, it offers a tool for optimising the definition, assessment and adjustment of spectroscopic parameters and the characterisation of tumour volumes.



Intellectual Property

This technology is protected by patent.



Aims

We are looking for a partner interested in a license and/or a collaboration agreement to further develop and exploit this innovative technology.



Classification

Area: Medical device
Pathology: Other