GadoLymph: Gadolinium Nanohydrogels for Lymph Node Magnetic Resonance Imaging

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partner countries:

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Project description:

For many types of cancer the lymphatic system serves as a major thoroughfare for the dissemination of metastatic cancer cells. The early detection of metastases in lymph nodes is crucial for the effective diagnosis and treatment of cancer. Imaging techniques, such as ultrasound CT or MRI are limited in sensitivity, especially in the detection of micro-metastases in lymph nodes. The diagnostic accuracy of MRIs could be improved by injecting contrast agents prior to imaging. The objective of the GadoLymph project is to develop hypersensitive contrast agents for Lymph Node MRI (LNMRI) by developing lymphotropic biocompatible nanohydrogels which incorporate gadolinium chelates. These nanohydrogels are created by the self-assembly of biocompatible biopolymers capable of trapping substantial quantities of water. When a gadolinium chelate is incorporated in the nanohydrogel, the MRI signal is greatly amplified and detection is significantly improved.