

Fast-tracked: First In-human Trial for Aggressive Brain Tumours

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A novel technology designed to precisely image aggressive brain cancers and guide treatment is being developed by the University of South Australia and Australian cancer diagnostic company, Ferronova, potentially helping thousands of people who are diagnosed with the deadly condition each year.

The new MRI nanotechnology targets a specific marker that is found in more than 90 per cent of solid tumours, including high-grade brain cancers.

Already yielding promising preclinical results in a prostate cancer model, the new MRI technology has potential to have a significant impact on aggressive brain cancers. The new funding will progress the technology towards a first in-human trial.

UniSA's Dr Nicole Dmochowska will lead the research, supported by a REDI Fellowship*, announced today by The Hon Greg Hunt MP.

Dr Dmochowska says there is a critical need for better imaging of high-grade brain tumours.

"The prognosis for high-grade brain tumours such as glioblastoma remains abysmal, so it's vital that we progress new technologies that can potentially enable more precise targeting of tumours," Dr Dmochowska says.

"This research will advance a cutting-edge imaging technology developed in collaboration with Ferronova and with the support of the [NeuroSurgical Research Foundation](#) designed to more accurately image and therefore treat brain tumours with no additional neurotoxicity.

Dr Hien Le, a radiation oncologist at the Royal Adelaide Hospital and one of the Chief Investigators in the seed funding for this work, says the research has potential to advance cancer treatments.

“As someone who specialises in the management of brain cancer, I understand the importance of accurate tumour delineation,” Le says

“Better imaging means we can more confidently define the tumour target, facilitating precise treatment delivery, whilst minimising damage to normal healthy tissues.”

In 2021, there were 1896 new diagnoses of brain cancer (1191 males and 725 females). Glioblastoma is the most common brain malignancy with a five-year survival rate of only 5 per cent.

Dr Melanie Nelson, R&D Manager at Ferronova, says the research will streamline preclinical validations for the technology for brain tumours, in preparation for a phase 1 ‘first in human’ clinical trial.

“Ferronova is determined to transform the precision of cancer imaging, surgery and therapy to ensure that everyone diagnosed with cancer is given the best possible care,” Dr Nelson says.

“The new technology builds on Ferronova’s cancer staging technology [FerroTrace](#) currently undergoing clinical trials in several cancer types.

“By bringing together the best minds in chemistry, bioengineering and oncology we’re continuing to push the boundaries to help make sure no one dies unnecessarily because a cancer was missed.”

Read the [original article](#) on UniSA.