

# Scientists identify link between brain development and cancer

April 20 2016

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Researchers at The University of Queensland and the QIMR Berghofer Medical Research Institute have identified a protein which plays a key role in brain cancer, opening the door to potential new treatments.

The scientists found that the NFIB [protein](#), which regulates brain development before birth, can also affect the growth of brain cancer.

Queensland Brain Institute Deputy Director Professor Linda Richards said low levels of NFIB protein were correlated with poor survival in the most deadly form of brain cancer – glioblastoma (GBM).

"Crucially, our study identified that increasing the level of NFIB in human brain cancer [cells](#) stopped the cancer from growing," Professor Richards said.

"This in turn opens the door for long-term research into whether we can prevent the cancers in the first place, by maintaining healthy NFIB levels."

The discovery stems from decades of work in Professor Richards' laboratory on the function of NFIB during brain development.

"In early [brain development](#), this protein plays an important role in determining when cells stop proliferating, and instead become mature cells," Professor Richards said.

"It keeps the number of cells formed in the developing brain in check.

"We therefore wondered whether NFIB might function in the same way in brain tumours."

Professor Richards recognised the link with [brain cancer](#) and teamed up with QIMR Berghofer's Professor Andrew Boyd and Dr Brett Stringer to investigate further.

Dr Stringer found that levels of NFIB were highest in low-grade glioma and lowest in the most aggressive form of the cancer.

"Crucially, we found that the level of NFIB present in the brain tumour correlated directly with a patient's survival," Dr Stringer said.

"We also found that increasing the levels of NFIB, using drugs that are already available, slowed the growth of half of these brain cancers."

GBM is the most aggressive form of malignant brain tumour. Approximately 800 Australians are diagnosed with this cancer each year. Patients survive an average of 14 months from the time they are diagnosed.

The research is published in the journal *Oncotarget*.

**More information:** Nuclear factor one B (NFIB) encodes a subtype-specific tumour suppressor in glioblastoma. [DOI: 10.18632/oncotarget.8720](#)

Provided by University of Queensland

Citation: Scientists identify link between brain development and cancer (2016, April 20)  
retrieved 26 April 2024 from  
<https://medicalxpress.com/news/2016-04-scientists-link-brain-cancer.html>

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