Glioblastomas are lethal brain tumours. Dr Geraldine O’Neill has been awarded an NHMRC grant to discover how these cancer cells penetrate neighbouring healthy brain tissue.

Only 20% of patients diagnosed with a glioblastoma will be alive 5 years after diagnosis. Penetration and spreading of the glioblastoma cancer cells into the rest of the brain means that after surgery to remove the tumour, the cancer can reappear in different parts of the brain. The spreading of the brain tumour cells is a major reason why glioblastomas are so difficult to treat and new treatments are urgently needed.

Dr O’Neill will be testing her theory that a protein molecule, NEDD 9, promotes the spread of these deadly brain cancers.

“If we can understand the lethal ability of the cancer cells to invade then we are in a good position to come up with new therapies,” said Dr O’Neill.

“The survival rate from glioblastoma is terrible,” she said. “It stands in stark contrast to the high survival rates of other more common cancers such as prostate (88%), breast (88%), colon (63%) and melanoma (80%).”

Dr O’Neill has spent 10 years studying NEDD 9. The molecule was discovered at Fox Chase Cancer Centre in Philadelphia and Dr O’Neill worked there for 3 years, when very little was known about it. During this time they showed that the protein molecule contributed to cell movement.

The NHMR grants are awarded nationally and are peer reviewed. Dr O’Neill’s expertise and track record was recognised, as she is the sole investigator. The grants are usually awarded to teams. She will now have the funding to spend the next 3 years studying the cell biology of glioblastoma. Seven other research teams with investigators at the Kids Research Institute have also received research grants.

The Children’s Hospital at Westmead is a world class centre for the treatment of children who have a wide range of medical conditions and disorders. A high priority is placed on research to improve the lives of present and future patients. Kids Research Institute is the research arm of The Children’s Hospital at Westmead.

The Kids Research Institute focuses on developing cures for, and preventing, childhood disease across seven research themes: Neurosciences and Mental Health; Cancer Biology; Tissue repair; Genetics, Gene Therapy and Genomics; Obesity and Metabolism; Infectious Disease, Immunology and Renal Medicine; and Clinical Sciences and Health Services Delivery.

Established in 1880, The Children’s Hospital at Westmead is a stand-alone public Hospital and registered charity with 3,000 staff working in 150 departments. Over 60,000 sick children and their families are cared for each year in a family-focused, healing environment.