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Gene therapy to protect from allergies

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A single treatment giving life-long protection from severe allergies such as asthma could be made possible by an immunology research conducted at the University of Queensland.

The main challenge during allergies is that the immune cells, known as T-cells, develop a form of immune 'memory' and become very resistant to treatments.

Researchers have now been able wipe the memory of these T-cells in animals with gene therapy, by de-sensitising the immune system so that it tolerates the protein.

During the research, blood stem cells were taken, specific gene was inserted which regulates the allergen protein and injected into the recipient. Those engineered cells produced new blood cells that expressed the protein and targeted specific immune cells, thereby 'turning off' the allergic response.

Researchers are moving further to subject these finding to pre-clinical investigation, with the next step being to replicate results using human cells in the laboratory.

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