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Seaweed extract stops stem cell tumours

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A SEAWEED extract can overcome a problem that can be sparked when embryonic stem cells are implanted in humans, Australian scientists say.

Researchers at the University of NSW have worked out how to prevent the cells from forming tumours when they are injected into the body.

The answer was to encase each cell in a tiny capsule made from a seaweed extract called alginate before transplantation, said Professor Bernie Tuch, study leader and director of the university's diabetes transplant unit.

"Whilst embryonic stem cells have great potential to deliver therapies for disorders, such as diabetes, a fear has been that they will form tumours because of the presence of undifferentiated cells," Prof Tuch said.

"Our breakthrough removes what could have been a stumbling block to this vital research."

The research team used both human and mouse embryonic stem cells to experiment with the capsules, which naturally allow nutrients in but block problematic cells.

This stops the embryonic cells from producing non-malignant tumours, called teratomas, and also prevents the cells from being rejected.

The advance, published today in the journal *Transplantation*, comes as the Senate last week voted to lift a ban on therapeutic cloning, a step Prof Tuch called "very encouraging".

The therapeutic cloning issue still needs to be debated by the House of Representatives.

The research team is already using the technology to transplant insulin-producing cells from donors into insulin-dependent diabetic people without using anti-rejection drugs.

The trial involving six diabetics is expected to be completed by mid-2008.

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