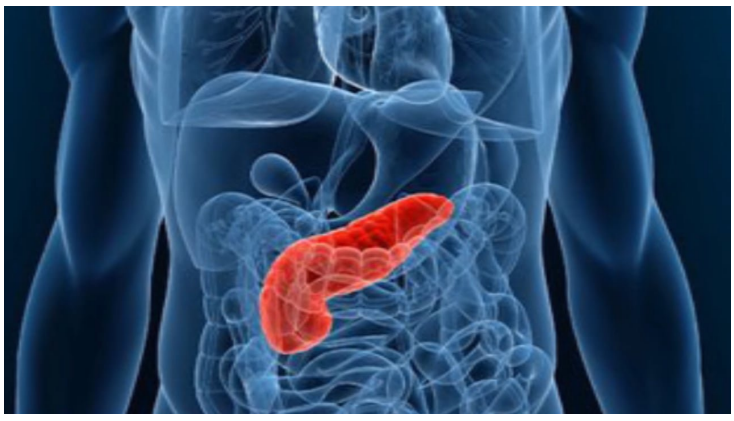
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IIT researchers make implantable pancreas for treating diabetes

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The silk scaffold was found to be biocompatible as it did not trigger any immune reaction or cause any adverse reaction when implanted.



Researchers at the Indian Institute of Technology (IIT) Guwahati have successfully created an implantable bioartificial pancreas model grown within a 3D silk scaffold.

The “pancreas”, which encapsulates insulin-producing cells, is capable of naturally producing insulin in a sustained manner.

The silk scaffold was found to be biocompatible (not toxic to living tissue) as it did not trigger any immune reaction or cause any adverse reaction when implanted.

Since type 1 diabetes patients do not have insulin-producing beta cells, the researchers have turned to stem cells to produce beta cells.

The team coated the scaffold containing beta cells with a semi-permeable membrane barrier. The membrane allows insulin produced to be released into the blood stream but does not allow the immune cells to cross the membrane and kill the islet cells.

To ensure that the implant is not rejected by the body’s immune system, drugs that suppress the immune system were embedded in the scaffold.

The researchers are planning to carry out trials in animals. If successful in animal and human trials, it can be used for treating people with type 1 diabetes.