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IIT researchers create a bioengineered liver

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A group of researchers at the Indian Institute of Technology (IIT) Guwahati have created a bioengineered liver model within a 3D silk scaffold.

The silk scaffold is capable of supporting growth, distribution as well as sustaining the functionality of liver cells.

The researchers tested scaffolds made of mulberry and non-mulberry silk fibroins and a blend of the two silk varieties in petri dishes in the lab and in animal models.

Unlike mulberry silk, non-mulberry silk has cell binding sites (RGD) that help in better cell attachment and proliferation.

Once successful in animal models and humans, the scaffolds can potentially be used for generating a bioartificial liver for human transplantation. The 3-D platforms may also come in handy for high-throughput drug testing by pharmaceutical companies.

Currently, animals are used for carrying out such tests. A non-animal model made of human liver cells will have distinct advantages and also reduce the number of animals sacrificed. They can also be used for creating cirrhosis disease models for drug development.