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TISSUE ENGINEERED POLY (VINYL ALCOHOL) MESH FOR THE TREATMENT OF ABDOMINAL HERNIA

Daniella Feher and **Kristóf Molnár**
Semmelweis University, Hungary

Hernia is the weakness or defect in the abdominal wall or inguinal area. One of the solutions can be the usage of surgical mesh. To fend off the effects of intraperitoneal positioned non-degradable mesh our research group created absorbable scaffolds by electrospinning. For the biocompatibility experiments *In vitro* studies were performed on Human lung epithelial (A549) cell line and the *In vivo* evaluations were observed on Wistar rats (n=45, 200-250g). In this animal model to determine the biological behavior abdominal wall defect was performed than was covered with the nanofiber mesh. Adhesion formations were measured by a modified Diamond score. From the samples macroscopically and histological responses were graded. *In vitro* examination showed that the monomers of the nanofiber are biocompatible for the cells. According to the histological examinations all samples were integrated to the surrounding tissue and there were no foreign body reaction. Significantly more adhesion formation were found on the non-absorbable suture line (n=19) than were attached to the surface of the mesh.

The biocompatibility of the nanofiber surgical mesh was demonstrated by our studies. This nanofiber mesh could be a promising scaffold for the tissue engineering.

BIOGRAPHY

Daniella Feher is a PhD student from Semmelweis University, Hungary. Her research is about regenerative medicine tissue engineering and molecular biology which deals with the process of replacing, engineering or regenerating cells, tissues and nanofibers to restore and establish normal function.

daniella.feher@gmail.com



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