Press release **Warsaw, 26th February 2019**

Polish scientists are intensively working on the creation of the bionic pancreas. At the beginning of March, the team of the Foundation of Research and Science Development will be the first in the world to test bioprinting of a fully vascularized organ in 3D technology. The prototype of the bionic pancreas will be placed in a bioreactor built by them and subjected to further tests.

Foundation of Research and Science Development, as the leader of the Bionic Consortium, is currently implementing a project related to the printing of bionic pancreas scaffolding in 3D technology, co-financed from The National Centre for Research and Development under the STRATEGMED III programme. The aim of the project is to create a tailor-made pancreas from the patient's stem cells, which will eliminate the risk of rejection. The collected cells will be multiplied and converted into alpha and beta cells, producing glucagon and insulin. In the next cartridge there will be elements that will build the vascular system - the smallest vessels that the team of the Foundation of Research and Science Development is able to print are those that have a diameter of about 1 mm. Scientists assume that the remaining tiny vessels will develop by themselves. The bioprinted organ will be inserted into a self-designed bio-reactor, where its functionality will be checked. With the right electronic system and operating system, researchers will be able to monitor and regulate maturation parameters in real time.

The innovation of the bionic pancreas is based on the application of a unique composition of bioink, containing living cells and pancreatic islets. Intensive implementation and patent works are in progress in the laboratory as well as the latest research necessary to carry out a bio-printing test of a bionic organ.

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3D printing is the future of modern medicine, which can change the lives of many patients. Therefore, scientists working on the bionic pancreas decided to significantly extend the scope of their research. The Foundation plans to start further projects of bioprinting of tissue and whole organs. In this way the idea of organizing a charity auction was born, from which the funds will be used in full for the expansion of the Labory for Tissue Bioprinting. The Foundation plans to create a modern research base enabling the implementation of new projects related to bioprint. The subject of the auction will be artistic photographs taken on the basis of photographs of pancreatic islets taken with a fluorescent microscope in the Foundation's laboratory. The team has created an unconventional and innovative combination of science and art, through which it promotes the achievements of Polish scientists and opportunities for the development of modern medicine.

The originators and founders of Cellink, the world's forerunner in the field of 3D printing, became interested in the research of the Polish scientific centre. Erik Gatenholm and Hector Martinez will visit the Foundation's laboratory and take part in a charity auction. The event will take place on March 14th in Warsaw.

You can also take part in the auction by phone or via https://onebid.pl platform.

More about the auction: https://fundacjabirn.pl/aukcja/

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Foundation of Research and Science Development was established in 2009. The organization deals mainly with educational and research activities in the field of medical and biochemical sciences. Over the 10 years of its operation, the Foundation has carried out many impressive projects. Starting from pioneering research on endoscopic transplantation of pancreatic islets under gastric mucosa, participation in the theoretical development of medical protection for the manned mission to Mars, conducting a nationwide educational campaign "Ogarnij cukier -Wean off sugar" and pilot research on gene expression in diabetes, to taking up the challenge of bioprinting of bionic pancreas in 3D technology.

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The Foundation was and still is inspired by the scientific activity of Michał Wszoła MD, PhD, a transplantologist surgeon, the author of a new method of mini-invasive treatment of complicated diabetes - endoscopic transplantation of pancreatic islets under gastric mucosa and the co-founder of international multimedia platforms for the exchange of medical knowledge: medtube.net and medizzy.com.

More info: https://fundacjabirn.pl/

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