Wyss Zurich – ETH Zurich / University of Zurich

Seminar

Translational and Clinical Wyss Zurich Projects

Tuesday, February 26, 2019 at 12:30 – 13:30
Kleiner Hörsaal OST,
University Hospital Zurich

Dr. Nancy Falla, Dr. Valentina Lintas and Robin Müller

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Tissue-engineered human matrices to repair and regenerate the heart – Status quo within the Wyss Zurich LifeMatrix project

Globally, one out of 100 children is born with a heart defect. In some severe cases, a heart valve or blood vessel functions poorly or may even be missing. Such congenital heart defects are commonly treated today by replacing the missing or damaged part with synthetic prosthetic materials. A major drawback of these materials is that these grafts need to be replaced regularly as the child grows, thus requiring repeated surgery and lifelong medical treatment.

The LifeMatrix project developed a unique tissue engineering technology to grow replacement tissue in the laboratory, which will be compatible with every patient, regenerate and grow with the recipient. After implantation, the recipient's own cells will repopulate the LifeMatrix, replacing the biodegradable scaffold; and this tissue will continue to grow with the child. Such grafts will avoid repeated major surgery and its associated risks.

Previous work on autologous and personalized cellular tissues (patient receives tissue grown from his own body), which already obtained approval for a pilot clinical study by the German authority (PEI), is the basis for this next generation tissue engineering technology. The aim of the Wyss Zurich project is to bring the LifeMatrix technology into the clinic with a first-in-man clinical trial.

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Translating
Science into Life

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