

Immunosuppressant drug Tacrolimus used in cell transplantation therapy inhibits the nascent construction of vascular network: Towards performance improvement of cell transplantation therapy

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A research group led by Professor Masafumi Goto of the New Industry Creation Hatchery Center at Tohoku University (Concurrently serving at the Tohoku University Graduate School of Medicine), Professor Noriaki Ohuchi and Doctor Ryuichi Nishimura of the Division of Advanced Surgical Science and Technology at Tohoku University Graduate School of Medicine clarified in animal studies that the relatively safe immunosuppressive drug tacrolimus, used frequently in islet allotransplantation treatment of diabetes, inhibited the nascent construction of vascular vessel network around the islet after the transplantation. The inhibitory effects of sirolimus, with its many side effects, upon the nascent vascular vessel construction was known but tacrolimus, frequently used in clinical cases, exhibiting similar inhibitory characteristics was unknown up to now. It is hoped that this research will contribute to enhancing strategies in the improvement of cell transplant treatments in the future.

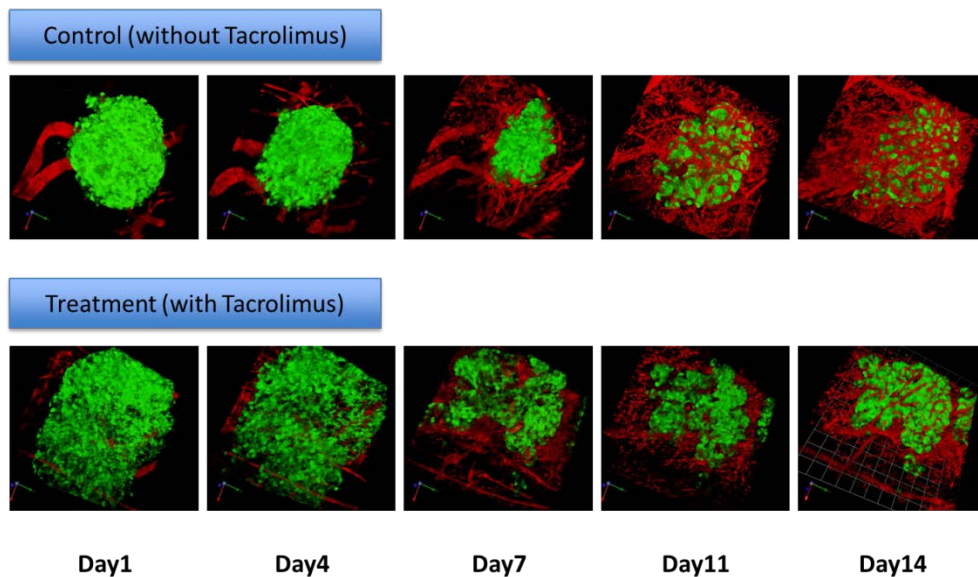
The research results were published in American research journal The Public Library of Science One (PLOS ONE) on April 17 (EST). The paper's title is "Tacrolimus Inhibits the Revascularization of Isolated Pancreatic Islets."



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Overlay of GFP fluorescence (pancreatic islets) and Texas Red fluorescence (blood vessels).
Upper row: islets in the control group, Lower row: islets in the tacrolimus-treated group.

“Tacrolimus inhibits the revascularization of isolated pancreatic islets.”

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