

Tubular system and interstitium of the kidney: (Patho-) physiology and crosstalk

Seminar





PD Dr. Louisa Steines

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Genetic Bioengineering to Improve Outcomes in Kidney Transplantation



Chronic kidney disease affects a large and increasing number of patients globally, many of whom ultimately require dialysis or kidney transplantation. Transplantation, although effective, faces significant challenges, including reduced graft survival due to rejection and the lifelong requirement for immunosuppressive therapy. This chronic immunosuppression is associated with substantial risks, including infections, malignancies, and other serious complications. Risk of allograft rejection combined with complications from immunosuppressive medications represent a major clinical obstacle. Improved strategies are urgently needed to enhance transplant success rates and patient outcomes by reducing the reliance on systemic immunosuppressants.

Recent research by the team led by PD Dr. Louisa Steines has identified specific immune modulators critical in the rejection process following kidney transplantation. However, targeting these immunological factors specifically in kidney tissues remains challenging. Prof. Simon Lebek's laboratory specializes in gene therapy and genetic bioengineering techniques, offering the expertise needed to specifically modify kidney tissue at a genetic level. A collaborative approach combining PD Dr. Steines' insights into immune modulation and Prof. Lebek's expertise in genetic bioengineering may lead to innovative therapeutic strategies. These novel strategies aim for permanent, targeted, and kidney-specific immune modulation, potentially reducing rejection rates and minimizing the adverse effects associated with systemic immunosuppression.

The upcoming lecture by PD Dr. Louisa Steines and Prof. Lebek will present the complementary research of both investigators, highlighting how the integration of immunological insights and advanced genetic bioengineering may lead to innovative strategies for improving outcomes in kidney transplantation.

Time: Monday, June 2, 2025; 16:00h Location: Seminarraum Physiologie VKL 4.1.29 Universität Regensburg and Zoom



Fau

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To get the Zoom link please contact:

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