AARHUS UNIVERSITY

Press release

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Basic information

Name: Maria Riedel Email: maria.riedel@clin.au.dk Phone: +45 31689978

Department of: Clinical Medicine

Main supervisor: Martin Kristian Thomsen

Title of dissertation: The Identification of Key Factors driving Prostate Cancer Progression by CRISPR/Cas9 in vivo Modeling

Date for defence: 25/06-2020 at (time of day): 14.00 Place: online via zoom

Press release (Danish)

Identifikationen af nøglefaktorer der driver prostatakræftprogression ved brug af CRISPR / Cas9t

Prostatakræft er blevet et globalt sundhedsmæssigt problem med begrænsede behandlingsmuligheder når der er dannet metastaser. Heterogeniteten af prostata kræft er en stor udfordring ved etablering af nye model-systemer der kan anvendes til validering af gener, der potentielle er med til at udvikle sygdommen.
Dette projekt har været fokuseret på at generere en ny musemodel af prostata kræft ved hjælp af CRISPR / Cas9-teknologi. Projektet har desuden undersøgt funktionen af transkriptionsfaktoren FOS der tilhøre familien af Aktivering Protein-1 (AP-1). Projektet blev udført af Maria Riedel, der forsvarer hendes afhandling den 25/06.

AP-1-komplekset er impliceret i forskellige biologiske processer, idet det opretholder en fin balance i celle-homeostase og lader cellen reagere på eksterne og interne stimuli. Dereguleringen af AP-1-kompleks er involveret i mange sygdomme, herunder kræft. Ekspressionen af FOS/AP-1 transkriptionfaktor er ofte opreguleret i forskellige kræft typer. Vi har undersøgt FOS implikation i prostata kræft og viser at nedregulering af FOS ekspression bidrager til progression af beginen sygdom til invasiv prostatakræft. Projektet har benyttede sig af CRISPR / Cas9 genredigering til implementeringen en ny muse model, der kan fremskynde forskning i prostata kræft.

Forsvaret er offentligt og finder sted den 25 juni kl. 14 via online mødeplatformen "zoom". Projektets titel er "Identifikationen af nøglefaktorer der driver prostatakræftprogression ved brug af CRISPR / Cas9". For mere information og linket til at deltage i zoommødet, kontakt ph.d.-studerende Maria Riedel, e-mail: maria.riedel@clin.au.dk, telefon +45 31689978.

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Press release (English)

"The Identification of Key Factors driving Prostate Cancer Progression by CRISPR/Cas9 in vivo Modeling"

Prostate cancer has become a major global health concern with limited treatment options for advanced disease. The heterogeneity depicted by prostate cancer has been a major challenge in the establishment of good model systems for fast validation of potential new driver genes.
The focus of this project has been to generate a novel mouse model using CRISPR/Cas9 technology and, thereby, investigate the role of the Activating Protein-1 (AP-1) transcription factor FOS in prostate cancer. The project was carried out by Maria Riedel, who is defending her dissertation on 25/06.

The AP-1 complex is implicated in various biological processes, maintaining a fine balance in cell homeostasis and allowing the cell to react to external and internal stimuli. The deregulation of this complex is involved in many human diseases, including cancer. While the gene expression of AP-1 subunit FOS is often shown to be upregulated in cancer, this project demonstrates how the loss of FOS contributes to prostate cancer progression. Using CRISPR/Cas9 gene editing, this project also led to the implementation of a novel mouse model system that may accelerate future prostate cancer research.

The defence is public and takes place on 25/06 at 2 pm online via the meeting platform "zoom". The title of the project is "The Identification of Key Factors driving Prostate Cancer Progression by CRISPR/Cas9 in vivo Modeling". For more information and the link to join the zoom meeting, please contact PhD student Maria Riedel, email: maria.riedel@clin.au.dk, Phone +45 31689978.

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