

Press release

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Basic information

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Department of: Clinical Medicine

Main supervisor: Professor, PhD, MSc Jakob Skou Pedersen, Department of Molecular Medicine (MOMA), Aarhus University Hospital, and Bioinformatics Research Centre (BiRC), Aarhus University

Title of dissertation: Non-coding driver detection founded on a detailed description of mutation processes in cancer

Date for defence: Tuesday the 8th of August 2017 at (time of day): 13.00 Place: Ground Floor Auditorium, Department of Molecular Medicine, Aarhus University Hospital, Skejby - Brendstrupgaardsvej 21, 8200 Aarhus N

Press release (Danish)

Mutationsprocesser og gen-regulatoriske cancer "drivers"

I et nyt ph.d.-projekt fra Aarhus Universitet, Health, udforskes cancer-relaterede mutationsprocesser med særligt henblik på at identificere gen-regulatoriske DNA-regioner, der udviser potentiale til at drive udviklingen af cancer. Projektet er gennemført af MSc Malene Juul Rasmussen, der forsvarer det d. 8/8-2017.

Normalt væv adskiller sig som regel fra cancer-væv i kraft af tusindvis af somatiske mutationer. Størstedelen af disse mutationer er neutrale, og bidrager ikke til udviklingen af cancer. Men enkelte af mutationerne – de såkaldte "drivers" – spiller en væsentlig rolle i transformationen af en normal celle til en cancer celle. Hovedformålet med dette ph.d.-projekt er at øge forståelsen af de mutationsprocesser der giver ophav til de mange somatiske mutationer der observeres i cancer-væv, samt at udvikle en metode der gør os i stand til at adskille de få vigtige cancer-drivende mutationer fra de mange neutrale mutationer. De sidste årtier har budt på opdagelser af flere protein-kodende gener, der klassificeres som cancer "drivers". Det vil sige gener, der i muteret tilstand kan drive udviklingen af cancer. I dette ph.d.-projekt er fokus på den ikke-proteinkodende del af det menneskelige genom, og her identificeres flere gen-regulatoriske kandidater af mulig klinisk relevans.

Forsvaret af ph.d.-projektet er offentligt og finder sted den 8/8 kl. 13.00 i auditoriet i stueetagen ved Molekylær Medicinsk Afdeling, Aarhus Universitetshospital, Brendstrupgaardsvej 21, Aarhus N. Titlen på projektet er "Non-coding driver detection founded on a detailed description of mutation processes in cancer". Yderligere oplysninger: Ph.d. studerende Malene Juul Rasmussen, e-mail: malene.juul.rasmussen@clin.au.dk, tlf. +45 78455375.

Bedømmelsesudvalg:

Associate Professor, PhD, MSc Thomas Damm Als, Department of Biomedicine, Faculty of Health, Aarhus University, Aarhus, Denmark

Assistant Professor of Computational Genomics, PhD Ekta Khurana, Meyer Cancer Center Institute for Computational Biomedicine, Englander Institute for Precision Medicine, Department of Physiology and Biophysics, Weill Cornell Medicine, New York, USA

Professor, PhD Martin Bøgsted, Hematology Department of Clinical Medicine, The Faculty of Medicine, Aalborg University Hospital, Aalborg, Denmark

Press release (English)

Mutation processes and gene regulating cancer drivers

In a new PhD project from the Faculty of Health at Aarhus University, cancer related mutation processes are explored with the purpose of detecting gene-regulating regions of DNA with the potential to drive cancer development. The project was carried out by MSc Malene Juul Rasmussen, who is defending her dissertation on 8/8-2017.

Healthy tissue and tumour tissue usually differ by thousands of somatic mutations. The vast majority of these mutations are neutral and do not contribute to cancer development. However, few of these mutations – the so-called driver mutations – play a key role in the transformation of a normal cell into a cancer cell. The main purpose of this PhD project is to contribute to the understanding of the mutation processes that give rise to the many somatic mutations observed in tumour tissue, as well as to develop a method, which allows us to distinguish between the few important driver mutations and the many neutral mutations. In the past decades, several protein-coding cancer driver genes have been detected. These are genes that, when mutated, have the potential to drive cancer development. The work of this PhD project is focused on the non-protein-coding part of the human genome, and several gene-regulating candidate cancer drivers of potential clinical relevance are detected.

The defence is public and takes place on 8/8-2017 at 13.00 in the ground floor auditorium at the Department of Molecular Medicine, Aarhus University Hospital, Brendstrupgaardsvej 21, Aarhus N. The title of the project is "Non-coding driver detection founded on a detailed description of mutation processes in cancer". For more information, please contact PhD student Malene Juul Rasmussen, e-mail: malene.juul.rasmussen@clin.au.dk, Phone +45 78455375.

Assessment committee:

Associate Professor, PhD, MSc Thomas Damm Als, Department of Biomedicine, Faculty of Health, Aarhus University, Aarhus, Denmark

Assistant Professor of Computational Genomics, PhD Ekta Khurana, Meyer Cancer Center Institute for Computational Biomedicine, Englander Institute for Precision Medicine, Department of Physiology and Biophysics, Weill Cornell Medicine, New York, USA

Professor, PhD Martin Bøgsted, Hematology Department of Clinical Medicine, The Faculty of Medicine, Aalborg University Hospital, Aalborg, Denmark

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