

Press release

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Basic information

Name: Marie Bill Email: marie.bill@clin.au.dk Phone: +4525303907

Department of: Clinical Medicine

Main supervisor: Professor Peter Hokland

Title of dissertation: The role of the C-type lectin domain family 12 member A receptor as a marker of cancer stem cells in myeloid malignancies

Date for defence: 25th of April at (time of day): 14:00 Place: Auditorium 1, Aarhus University Hospital, Tage-Hansens Gade 2 (entrance 4A)

Press release (Danish)

Anvendeligheden af en ny markør for kræft-stamceller ved myeloide blodsygdomme

I et nyt ph.d.-projekt fra Aarhus Universitet, Health har forskere undersøgt, om overflade-receptoren CLEC12A kan bruges som markør for kræft-stamceller ved to blod-kræftsygdomme; myelodysplastisk syndrom (MDS) og akut myeloid leukæmi (AML). Projektet er gennemført af cand. med. og læge Marie Bill, der forsvare sin afhandling d. 25/4-2018.

Det menes, at mange blod-kræftsygdomme vedligeholdes af en lille population af kræft-stamceller, der til stadighed giver ophav til de mange ondartede celler, der udgør den samlede sygdomsbyrde. Kræft-stamceller er mere modstandsdygtige overfor kemoterapi, bl.a. fordi de besidder evnen til at ligge i dvale. Derfor er kræft-stamceller attraktive mål for fremtidig specifik behandling af ondartede blodsygdomme, og afdækning af disse cellers karakteristika, inklusiv hvordan de adskiller sig fra normale blod-stamceller, udgør et aktivt forskningsområde indenfor de myeloide blodsygdomme. Overflade-receptoren CLEC12A anses som en lovende markør for myeloide kræft-stamceller, og der udvikles aktuelt medicinske strategier til at angribe dette protein. Ved hjælp af præcise cellesorterings-metoder, langtids-dyrkning af kræft-stamceller i laboratoriet samt avancerede molekylær-genetiske undersøgelser på udvalgte sjældne celle-populationer, viser resultaterne fra ph.d. projektet samlet set, at CLEC12A-receptoren er en brugbar markør for kræft-stamceller både ved MDS og AML, men at anvendeligheden af markøren - ved disse særdeles komplekse blodkræftsygdomme - i høj grad afhænger af en grundig diagnostik på biologisk relevante celler fra individuelle patienter.

Forsvaret af ph.d.-projektet er offentligt og finder sted den 25/4-2018 kl. 14 i Auditorium 1, Aarhus Universitetshospital, Tage-Hansens Gade 2 (indgang 4A), Aarhus. Titlen på projektet er "The role of the C-type lectin domain family 12 member A receptor as a marker of cancer stem cells in myeloid malignancies". Yderligere oplysninger: Ph.d.-studerende Marie Bill, e-mail: marie.bill@clin.au.dk, tlf. +45 25303907.

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Press release (English)

The role of a new marker for cancer stem cells in myeloid blood disorders

In a new PhD project from Aarhus University, Health, researchers have investigated the usefulness of a novel surface receptor - CLEC12A - as a marker of cancer stem cells in two malignant blood disorders: myelodysplastic syndrome (MDS) and acute myeloid leukemia (AML). The project was carried out by Marie Bill, MD, who is defending her dissertation on 25th of April 2018.

In myeloid blood cancers, accumulating evidence suggests the neoplastic cell population to be maintained by a rare and distinct subset of cells with stem cell features, called cancer stem cells. Cancer stem cells are believed to be more resistant to chemotherapy and thus to be responsible for treatment failure in many cases of myeloid cancers. Therefore, myeloid cancer stem cells are of great scientific interest, as eliminating these rare disease propagating cells could theoretically be the road to cure. However, being able to characterize and distinguish these particular cells from normal hematopoietic stem cells remains a major challenge. By employing fluorescence activated cell sorting, long term culturing of putative cancer stem cells in combination with advanced molecular characterization of rare cell populations with distinct immunophenotypes, the role of the surface marker CLEC12A is further explored in this PhD project. Collectively, the results show that CLEC12A is a useful marker of cancer stem cells in both AML and MDS and notably, underscore the importance of more sophisticated and individualized diagnostics – preferably on purified cell subsets - in these complex and heterogeneous myeloid disease entities – if the future goal of practicing personalized medicine in these patients should be achieved.

The defence is public and takes place on 25th of April 2018 at 14:00 in Auditorium 1, Aarhus University Hospital, Tage-Hansens Gade 2, Entrance 4A, Aarhus. The title of the project is "The role of the C-type lectin domain family 12 member A receptor as a marker of cancer stem cells in myeloid malignancies". For more information, please contact PhD student Marie Bill, email: marie.bill@clin.au.dk, Phone +45 25303907.

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