Basic information

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Title of dissertation: "The role of IκBζ in the pathogenesis of psoriasis"
Date for defence: June 4th 2019 at 2 p.m. open to the public

Place: Aarhus University Hospital, Palle Juul Jensens Boulevard 99, Entrance G6 , Level 2 , Auditorium B G206, 8200 Aarhus N

Press release (Danish)

Ny viden om sygdomsmekanismerne involveret i psoriasis. Et nyt ph.d.-projekt fra Aarhus Universitet, Health, bidrager med ny viden om et protein kaldet IκBζ hos patienter med hudsygdommen psoriasis. Psoriasis er en kronisk sygdom hos 2-4 % af populationen. Psoriasis vulgaris er den hyppigste type og præsenterer sig med fortykkede røde områder af varierende størrelse belagt med skæl. Sværhedsgraden af psoriasis varierer kraftigt.

Psoriasis har en multifaktoriel ætiologi, der omfatter både genetiske og miljømæssige faktorer. Herudover indebærer psoriasis patogenesen både immunologiske og inflammatoriske signaler, som alle bidrager til den komplekse sygdomsmekanisme. I dag er vigtigheden af Th17-celler og IL-17(A) cytokiner velkendt i psoriasis. Flere behandlinger målrettet IL-17 og tilhørende receptorer er og bliver løbende udviklet. Proteinet IκBζ spiller en vigtig rolle i udviklingen af Th17-celler, og IκBζ medierer IL-17s effekter.

Hovedhypotesen i denne afhandling var, at IκBζ spiller en vigtig rolle i psoriasis. Resultaterne i denne afhandling understøtter hypotesen idet det vises, at cytokinerne IL-17F og IL-17A/F regulerer psoriasis-associerede gener og deres tilhørende funktionelle proteiner via IκBζ i humane keratinocytter. Denne afhandling viser også, at anti-IL-17A behandling involverer IκBζ samt ændrer genudtrykket i psoriasishud. Sidst, underbyggede disse studier hinanden ved fælles at påvise, at IκBζs signalveje omfatter Act1, p38 MAPK, JNK og NF-κB.

Konklusionen på dette PhD projekt er, at man kan overveje at målrette fremtidig psoriasisbehandling mod IκBζ. Fremtidige studier skal afklare muligheden af IκBζ som mål i psoriasisbehandling.

Forsvaret af ph.d.-projektet er offentligt og finder sted den 4. Juni 2019 kl. 14.00 på Aarhus Universitetshospital, indgang G6, auditorium B G206, Palle Juul-Jensens Boulevard 99, 8200 Aarhus N

Titlen på projektet er “The role of IκBζ in the pathogenesis of psoriasis”.

Yderligere oplysninger: Læge, Ph.d.-studerende Trine Bertelsen e-mail: bertelsen.trine@gmail.com, tlf. 22348011.

Bedømmelsesudvalg:

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Press release (English)

Novel insight into disease mechanisms involved in psoriasis. A new PhD project from Aarhus University, Faculty Health, provides new knowledge into the pathogenesis of psoriasis and focuses on an important protein named IκBζ. Psoriasis is a chronic disease affecting 2 to 4% of the population. Psoriasis vulgaris is the most common type and presents clinically as indurated erythematous plaques of different sizes covered with scales. The severity of psoriasis differs considerably.

Psoriasis has a multifactional aetiology that includes both genetic and environmental factors. Moreover, the pathogenesis of psoriasis comprises both immunological and inflammatory signals that contribute to the complex disease mechanisms. Today, the importance of Th17 cells and IL-17(A) cytokines has been established, and several treatments targeting IL-17A or its receptors have already been developed. IκBζ plays an important role in the development of Th17 cells, and mediates IL-17-driven effects.

The main hypothesis of this thesis was that IκBζ is a key player in the pathogenesis of psoriasis. The results of this thesis supported the hypothesis. The thesis demonstrated that IL-17F and IL-17A/F regulate specific psoriasis-associated genes and their functional proteins through an IκBζ-dependent mechanism in human keratinocytes. We demonstrated that IκBζ plays a central role in the anti-psoriatic effects mediated by anti-IL-17A. Finally, these four studies identified that IκBζ regulation is mediated by mechanisms involving Act1, p38 MAPK, JNK, and NF-κB signalling pathways.

In conclusion, this PhD thesis advocates that targeting IκBζ might present a potential strategy in the treatment of IL-17-driven diseases such as psoriasis. Future studies should aim to address this further.

The defence is public and takes place on June 4th 2019 at 2 p.m. at Aarhus University Hospital, Palle Juul-Jensens Boulevard 99, Entrance G6, Auditorium B G206, 8200 Aarhus N.

The title of the project is “The role of IκBζ in the pathogenesis of psoriasis”.

For more information, please contact MD, PhD student Trine Bertelsen e-mail: bertelsen.trine@gmail.com, Phone +45 22348011.

Assessment committee:

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