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The role of E-cadherin/ β -catenin signalling in the development of an asthmatic airway epithelial phenotype

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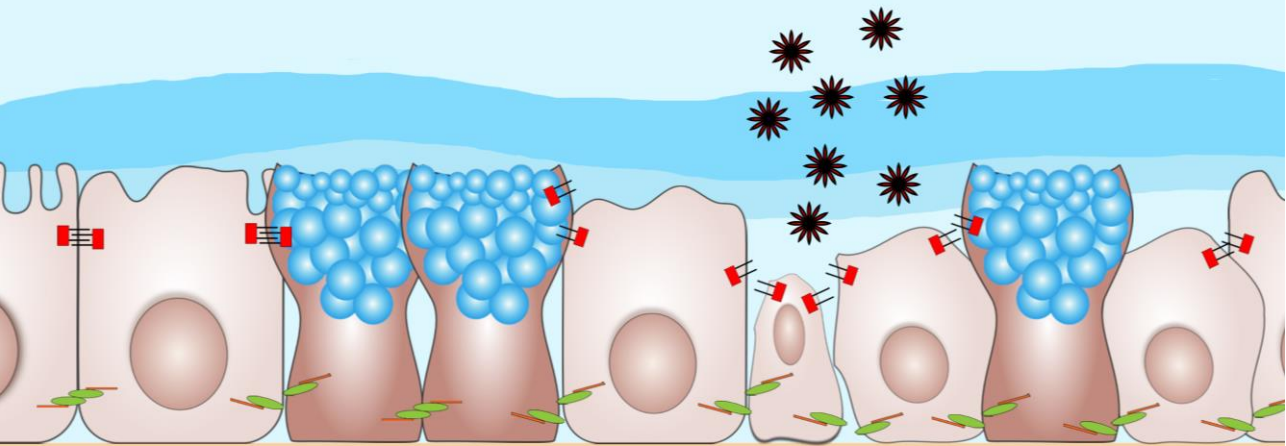
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The role of E-cadherin/ β -catenin signalling in the development of an asthmatic airway epithelial phenotype

Virinchi Naga Sarma Kuchibhotla

Thesis submitted in fulfilment of the requirements for obtaining the degree of

Doctor of Philosophy in Immunology and Microbiology

December 2020

School of Biomedical Sciences and Pharmacy
Faculty of Health and Medicine
University of Newcastle

Declaration

I hereby declare that the work embodied in this thesis was performed within the framework of the Groningen Research Institute of Asthma and COPD (GRIAC), and was supported by the University of Groningen, University Medical Center Groningen (UMCG), University of Newcastle (UON), Hunter Medical Research Institute (HMRI) and University of Newcastle Postgraduate Research Scholarship (UNIPRS) (Tuition Fees) and UNRS Central Scholarship. This project was also funded by the research grants obtained from De Cock Hadders (2017 – 47), Stichting Astma Bestrijding (SAB, 2017/007), Boehringer Ingelheim, National Health and Medical Research Council (NHMRC) of Australia (#1064405, #1079187, #1175134, #1072000) and Australian Research Council (#170100226).

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I hereby certify that the work embodied in the thesis is my own work, conducted under normal supervision. I confirm that the thesis contains no material which has been accepted, or is being examined, for the award of any other degree or diploma in any university or other tertiary institution, with the exception of the approved partner university associated with this Dual Award Doctoral Degree. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person, except where due reference has been made. I give consent to the final version of my thesis being made available worldwide when deposited in the University of Newcastle Digital Repository and its equivalent at the partner university, subject to the provisions of the Copyright Act 1968 and any approved embargo.



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Acknowledgment of Authorship

I hereby certify that the work embodied in this thesis contains published paper/s/scholarly work of which I am a joint author. I have included as part of the thesis a written declaration endorsed in writing by my supervisor, attesting to my contribution to the joint publication/s/scholarly work.

By signing below, I confirm that Virinchi Naga Sarma Kuchibhotla contributed as a:

- (i) Second author to the publication entitled, “Heijink IH, **Kuchibhotla VNS**, Roffel MP, Maes T, Knight DA, Sayers I, Nawijn MC. Epithelial cell dysfunction, a major driver of asthma development. Allergy. 2020 Aug;75(8):1902-1917.”
- (ii) First author to the publication entitled, “**Kuchibhotla VNS**, Jonker MR, de Bruin HG, Noordhoek JA, Knight DA, Nawijn MC, Heijink IH. Inhibition of β -catenin/CBP signalling improves airway epithelial barrier function and suppresses CCL20 release. Allergy. 2020 Jul;75(7):1786-1789.”
- (iii) Joint first author to the publication entitled, “**Kuchibhotla VNS***, Starkey MR*, Reid AT, Heijink IH, Nawijn MC, Hansbro PM*, Knight DA*. Inhibition of β -catenin/CREB binding protein signaling attenuates house dust mite-induced goblet cell metaplasia in mice. Submitted to Front Physiol 2021.”



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