For more than four decades the presence of the class II antigen-presenting molecule HLA-DR has been observed on T cells. It is a well-accepted T cell activation marker, yet the physiological role and functional consequence of HLA-DR on T cells remains enigmatic. Professional antigen-presenting cells (APCs), presenting antigenic peptides to CD4+ T cells, constitutively express HLA-DR. Consequently, HLA-DR is essential in many facets of the immune system, including T cell activation and peripheral tolerance induction. Interestingly, mouse T cells cannot express the functional protein but rather acquire it from APCs.

The aim of the present PhD study was to investigate the endogenous expression of HLA-DR by human T cells. Using several key methods, including flow cytometry and qPCR, the presented research indicate that human CD4+ T cells in peripheral blood do not express HLA-DR endogenously. A role for cell-derived vesicles, conveying a possible molecular transfer of HLA-DR, could not be demonstrated. Finally, the functional phenotype of HLA-DR-presenting CD4+ T cells points to a down-regulatory role for these cells, possibly involved in the induction and maintenance of peripheral tolerance.

Collectively, the presented research implies that HLA-DR holds a more pronounced role for T cells than as a simple activation marker. This has implications for both fundamental immunology as well as several pathological conditions, including autoimmune diseases and cancer.
To fulfil the requirements for the Ph.D. degree, Anne Louise Schacht Revenfeld has submitted the thesis: Investigating Aspects of HLA-DR Antigens on T Cells

The Faculty Council has appointed the following adjudication committee to evaluate the thesis and the associated lecture:

Professor Søren Buus
Immunology and Microbiology
Department of International Health
Copenhagen University
Denmark

Professor Jameel Inal
Cellular and Molecular Immunology Research Centre
Faculty of Life Sciences and Computing
London Metropolitan University
United Kingdom

Chairman:
Associate Professor Cristian Pablo Pennisi
Biomedicine Group
Aalborg University
Denmark

Moderator:
Associate Professor Jacek Lichota
Biomedicine Group
Aalborg University
Denmark

The Ph.D. lecture is public and will take place on:

Thursday 17 September 2015 at 13:00
Aalborg University – Fredrik Bajers Vej 7B, Room Frb 3-104
9220 Aalborg East

Program for Ph.D. Lecture on
Thursday 17 September 2015
Anne Louise Schacht Revenfeld

Investigating Aspects of
HLA-DR Antigens on T Cells

Chairman: Associate Professor Christian Pablo Pennisi
Moderator: Associate Professor Jacek Lichota

13.00 Opening by the Moderator
13.05 Ph.D. lecture by Anne Louise Schacht Revenfeld
13.50 Break
14.00 Questions and comments from the Committee
14.30 Questions and comments from the audience at the Moderator’s discretion
16.00 Conclusion of the session by the Moderator

After the session a reception will be held at
Fredrik Bajers Vej 7, D2-213 (HST coffee-room)