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JAN 2021

Thursday

WEBINAR

via Webex*

45' (talk) + 30' (discussion)

11.00-12.15pm



Antigen-specific CD4 T cell responses in humans: SARS-CoV-2 and beyond

ABSTRACT

Our group is interested in the regulation of immunity and immune pathology by CD4 T cells. We have established sensitive tools for the analysis of human antigen-specific CD4 T cells, including regulatory T cells and analyzed basic mechanisms of antigen-specific tolerance, immune pathology and protective immunity in humans. Recently we investigated the response to SARS-CoV-2. Coronavirus disease 2019 (COVID-19) displays high clinical variability but the parameters that determine disease severity of COVID-19 are unclear.

Pre-existing T-cell memory generated by frequent infections with related “common cold” Corona-virus (CCCoV) has been hypothesized as protective mechanism, but conclusive evidence is lacking. We used antigen-reactive T cell enrichment (ARTE) a sensitive technology to characterize antigen-reactive T cells, to deeply characterize SARS-CoV-2 and CCoV-specific T cells from healthy donors and COVID-19 patients, using multiparameter cytometry, single cell gene expression profiling and TCR avidity and cross-reactivity measurements. The data I will present suggest that pre-existing SARS-CoV-2 specific memory is not primarily induced by CCoV and is not protective but mainly increased in the elderly. Preexisting memory may in fact contribute to severe COVID19 disease observed in this age group.



SPEAKER

Prof Alexander SCHEFFOLD

Director Institute of Immunology,
Christian-Albrechts-Universität zu Kiel

HOST:

Department of Infection and Immunity (LIH)

RESPONSIBLE LIH SCIENTIST:

Prof Dirk Brenner / (dirk.brenner@lih.lu)

www.lih.lu

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