TWINCORE - Seminar
Thursday February 21st, 2019, 4 p.m.
TWINCORE Lecture Hall 0.020

SIMON says: A subset of CD8+ T cells improves antibody responses to seasonal influenza vaccine

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Influenza virus has a devastating societal impact, causing up to 650,000 deaths every year worldwide. Vaccination can prevent influenza-like illnesses, and thus lower the risk of the virus outbreak. However, currently available vaccines do not always provide protection, even among otherwise-healthy people, leading to serious pandemics.

Application of computational biology and machine learning holds promise for identifying immune cell populations and genes that mediate stronger antibody responses to influenza vaccines. Major challenge in application of machine learning to clinical datasets is to choose the optimal algorithm. In our work, we developed a novel approach, named Sequential Iterative Modelling "OverNight" or SIMON. SIMON intelligently compares results from 128 different algorithms. We applied SIMON to data from five clinical studies across 8 different influenza seasons. The results reveal previously unrecognized CD4+ and CD8+ T cell subsets strongly associated with a robust antibody response to influenza antigens.

Who is Adriana Tomic?

- Postdoctoral Researcher, Institute for Immunity, Transplantation and Infection, Stanford University School of Medicine, Stanford, USA
- Best PhD Award, Hannover Medical School (2017)
- Doctor of Philosophy, Hanover School of Medicine (2016)
- Diploma, University of Ljubljana (2010)

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