

## Propositions

1. Increased numbers of IgE+CD27- memory B-cells in patients with IgE-mediated allergic disease indicate a role for T-cell independent formation of allergen-specific IgE. *This thesis*
2. The identification of IgE+ memory B-cells enables a possible curation of IgE-mediated allergic disease through anti-IgE treatment. *This thesis*
3. Reduction of allergen exposure and well maintained symptomatic treatment reduces the allergic reaction, but does not resolve the allergic sensitization. *This thesis*
4. The prolonged beneficial properties of immunotherapy are not induced through a reduction of IgE+ B-cells numbers, but rather by the result of increased IgG4+ B-cell numbers, leading to a favorable IgG4 over IgE ratio. *This thesis*
5. The combined quantification of IgG4+ B cells, regulatory T cells and T-helper-2 cells might be exploited as a tool in the diagnosis for IgG4-related disease. *This thesis*
6. Due to the present-day high caloric diet, cell damage is rather resolved by cell renewal than through cell repair. As a result, increased cell division leads to increased risk of cancer, whereas the accompanied higher rate of apoptosis leads to increased risk of insufficient clearance of cell components, which can act as auto-antigens and therefore results in an increased risk of auto-immunity. *Based on J.A. Mattison, Nature Communication, 2017 and J.D. Mountz, Arthritis and Rheumatism, 1994.*
7. Manual gating in flowcytometry data analysis can be rather subjective and yields in high inter and intra observer differences. *N. Aghaeeepaur, Nature Methods 2013*
8. All components of matter arise by spontaneous processes that do not require sequences and codes, whereas all components of life arise by manufacturing processes that do require these entities. It is sequences and codes that make the difference between life and matter and that is why biology is not a complex form of chemistry. *Adapted from M. Barbieri, Cosmos and history 2008*
9. An electrical physiology exists alongside and interacts with biochemical and molecular signaling, and dismissing this area of science means ignoring an integral

part of any biological system. *Adapted from C. McCaig, et al, Journal of cell sciences 2009*

10. A mobile ultrasound connected to your smartphone will be the stethoscope of the 21<sup>st</sup> century.
11. You are deluded if you think that the world around you is a physical construct separate from your own mind. *Kevin Michel, date unknown*