Propositions *belonging to the thesis:*

Formation of the Immunoglobulin Repertoire in Precursor-B-cell Development

1. Pre-B cell receptor signaling induces *IGK* locus accessibility for recombination through a functional redistribution of long-range chromatin interactions within the Vκ region. (*this thesis)*

2. While Ig locus contraction mediates efficient recombination by juxtaposing genomically distant elements, sequential positioning of the *IGH* and *IGK* loci away from the nuclear periphery determines their stage-specific accessibility for recombination. (*this thesis)*

3. The decline in human B-cell production with age is associated with transcriptional upregulation of ID2 and impaired *IGH* locus contraction. (*this thesis)*

4. Developing B cells in the human fetus produce a diverse *IGH* gene repertoire with skewed V, D and J gene use and short CDR3 regions due to decreased IL-7R signaling and altered *IGH* junction processing. (*this thesis)*

5. The human thymus is enriched for B cells with autoreactive immunoglobulins. (*this thesis)*

6. The formulation of a scientific theory is essential to conduct experimental research, and every time the research findings support the theory, the theory survives. However, if the results contradict the theory, a new one should be formulated based on these findings. (*Stephen Hawking, A brief history of time, 1988)*

7. The increasing complexity of scientific knowledge and technology forces us to work in collaborative research environment. We have to share our experience and learn from each other to successfully pursue science, otherwise we are sentenced to lonely failures. (*Jonah Lehrer, The New Yorker, 2012)*

8. Discussing research findings is essential to stimulate creativity and provide progress in science. To avoid fraudulency, scientists should stand up for their own identity and assure that appropriate credit is given to others. (*Supported by Frederick Southwick, The Scientist, 2012)*

9. In the age of translational studies, the value of fundamental research should not be forgotten. Without new basic insights, there will be nothing to translate to clinical settings. (*Julie McClure, ASBMB Today, 2012)*

10. Personal self-criticism, ambition and desire for more let us focus on what remains to be done, while they hamper the appreciation of what we have accomplished. (*Marie Sklodowska-Curie, Letter to her brother, 1894)*

11. Publishing research findings is a very difficult process and unfortunately seems to be not always purely scientifically objective. Thus, if my boss were more famous, all my articles would have better chance to be published in *Nature*.