

Notch Signaling During T Helper 2 Cell-Mediated Inflammation in Allergic Asthma

1. Notch signaling is essential for Th2 cell-mediated allergic airway inflammation *in vivo* (*this thesis*).
2. The transcription factor Gata3 is crucial for the development, differentiation and function of both Th2 cells and type 2 innate lymphoid cells in a dose-dependent, cell stage-dependent and context-dependent fashion (*this thesis*).
3. Expression of the Notch ligand Jagged on dendritic cells, alveolar macrophages, fibroblastic reticular cells and T cells is dispensable for development of allergic airway inflammation (*this thesis*).
4. The initial priming and proliferation of Th2 cells is Notch independent but Notch signaling has a function in optimizing lymph node egress of Th2 cells (*this thesis*).
5. The proportions of surface Notch1 and Notch2 receptor positive cells are increased within the memory T cells and Th2 cell populations from partially-controlled and uncontrolled asthma patients, compared to healthy controls (*this thesis*).
6. Targeting the Notch transactivation complex with the cell-permeable peptide SAHM1 resolves house dust mite-driven allergic airway inflammation in mice. This indicates that a better understanding of Notch function in both innate and adaptive immunity can provide multiple avenues for therapeutic intervention in disease (*this thesis & Radtke, F., et al., Nat Rev Immunol, 2013*).
7. The simple Th1/Th2 view of helper T cells is a vast oversimplification. However, we face a new challenge in understanding T helper cell function as simply adding more subsets to our lexicon does not provide a satisfactory understanding of immune homeostasis and immune-mediated pathology (*Hirahara, K., et al., J Allergy Clin Immunol, 2013*).
8. Translational research is immensely valuable to bring new findings to clinical practice. However, in the end translation cannot exist without fundamental research. The flow in the innovation pipeline will dry up, there is still so much more to learn (*prof.dr. T. Schumacher*).
9. An experiment should not have to show positive results to earn its place in the published literature (*dr. E. Granqvist*).
10. It is our choices that show what we truly are far more than our abilities (*Albus Dumbledore (Harry Potter and the chamber of secrets by J.K. Rowling)*).
11. Where words fail, music speaks (*Hans Christian Andersen*).