

## Research group Georg Kraal

The mucosal immune system has a complex task. At one hand it needs to ignore the continuous presence of harmless antigens that enter our body via the airways and via the intestines, whereas on the other hand swift and appropriate reactions are needed in case of pathogens. The intrinsic tolerance of the mucosal immune system depends on an interplay between local factors that are present in the mucosal epithelia and draining lymph nodes, and that instruct the cells of the immune system. The micro-environment is therefore very important as a regulatory factor for the immune system and small perturbations in the properties of the micro-environment of either mucosa or lymph nodes can have a direct effect on the homeostasis of the mucosae. This can lead to excessive inflammation with possible anti-self components that may not be easy to down-regulate and may lead to damaging conditions as seen in inflammatory bowel disease. Understanding the many factors that regulate immunological tolerance and that maintain the right populations of myeloid and lymphoid cells along the mucosal epithelia is an important goal of our research group. In addition, we focus on the situation in the intestines in order to study the effects of chronic inflammation on the mucosal immune system. From various experimental models we try to translate our knowledge to human disease to explain how inflammation is regulated at the cellular and molecular level and how we can apply this to develop vaccination strategies for use in mucosal vaccines.

### Publications

[http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Kraal%20G%22\[Author\]&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed\\_ResultsPanel.Pubmed\\_DiscoveryPanel.Pubmed\\_RVAbstractPlus](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Kraal%20G%22[Author]&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DiscoveryPanel.Pubmed_RVAbstractPlus)