

Project 17: Funktion des Aryl-hydrokarbonrezeptor-Repressors (AhRR) bei der Abwehr polymikrobieller und parasitärer Infektionen

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The aryl hydrocarbon receptor (AhR) is a ligand activated transcription factor involved in the detoxification of environmental small chemicals. Besides, the AhR also recognizes endogenous ligands as tryptophan derivatives or food components and has an essential role in the regulation of immune responses. AhR activity is controlled by the AhR Repressor (AhRR), but the precise function of the AhRR is unclear up to now. We could show that the AhRR is expressed in immune cells of gut and skin and is upregulated by microbial ligands in these cells indicating an interplay of the AhRR with the innate immune system. AhRR deficient mice are protected from LPS-induced shock but show enhanced susceptibility to dextran sulfate (DSS) induced colitis. In future, we want to analyse the function of the AhRR during gut infection models such as a model for polymicrobial peritonitis, colon ascendens stent peritonitis (CASP) and oral infection with the parasite *Toxoplasma gondii*.