

**Project 5: Ein Toxin und viele Targets – Grundlagen der molekularen Interaktionen des HlyA aus *E. coli* mit humanen Zellen**

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**Abstract**

Uropathogenic *E. coli* (UPEC) strains secrete a number of virulence factors that interfere with a number of different biological processes of the target cell. One well-known virulence factor is haemolysin A (HlyA) of *E. coli*, a member of the RTX family of toxins. HlyA is capable to lyse different human cells by a basically not well-understood mechanism. On the other hand, the toxin induces  $\text{Ca}^{2+}$ -oscillations, superoxide formation, changes in the intracellular phosphorylation pattern, activation of MAP kinases or the secretion of for example cytokines. At sub-lytic concentrations. Based on our initial results, investigations of the toxin-membrane interaction as well as the determination of potential cellular receptors will be continued. Therefore, we employ approaches ranging from structural biology to cell biology. The results of these studies will provide a molecular picture of how receptor-toxin interactions modulate the response of the human target cell.