



Universität
Basel

Research Project

Wirtsadaptierter Metabolismus von bakteriellen Infektionserregern

Third-party funded project

Project title Wirtsadaptierter Metabolismus von bakteriellen Infektionserregern

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Organisation / Research unit

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Department

Project start 01.05.2009

Probable end 31.03.2012

Status Completed

Salmonella metabolism during infection critically depends on available carbon sources. To test the hypothesis that the host provides several, partially polymeric carbon sources during systemic salmonellosis, we will construct *Salmonella* mutants with utilization defects for 21 selected carbon sources. In addition, we will identify and inactivate potential extracellular degradative *Salmonella* enzymes. Quantitative mutant growth rates during systemic infection will be determined using competitive infections in a mouse model of typhoid fever. Epistasis analysis will be used to determine continuous and compensatory utilization pathways, and to determine the combined nutritional relevance of the identified carbon sources. Finally, we will develop a novel FACS-based method to isolate *Salmonella*-containing phagosomes for identification of host factors that might modulate host-pathogen nutrient flow. This project will provide the first system-level analysis of the nutritional host-pathogen interface in an animal infection model.

Keywords Infection biology, metabolism, systems biology, nutrient acquisition

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