

Publication

A community effort towards a knowledge-base and mathematical model of the human pathogen *Salmonella* Typhimurium LT2**JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 749167**Author(s)** Thiele, I.; Hyduke, D. R.; Steeb, B.; Fankam, G.; Allen, D. K.; Bazzani, S.; Charusanti, P.; Chen, F. -C.; Fleming, R. M. T.; Hsiung, C. A.; De Keersmaecker, S. C. J.; Liao, Y. -C.; Marchal, K.; Mo, M. L.; Ozdemir, E.; Raghunathan, A.; Reed, J. L.; Shin, S. -il; Sigurbjornsdottir, S.; Steinmann, J.; Sudarsan, S.; Swainston, N.; Thijs, I. M.; Zengler, K.; Palsson, B. O.; Adkins, J. N.; Bumann, D.**Author(s) at UniBasel** [Bumann, Dirk](#) ;**Year** 2011**Title** A community effort towards a knowledge-base and mathematical model of the human pathogen *Salmonella* Typhimurium LT2**Journal** BMC Systems Biology**Volume** 5**Number** 8**Pages / Article-Number** 1-9

BACKGROUND: Metabolic reconstructions (MRs) are common denominators in systems biology and represent biochemical, genetic, and genomic (BiGG) knowledge-bases for target organisms by capturing currently available information in a consistent, structured manner. *Salmonella enterica* subspecies I serovar Typhimurium is a human pathogen, causes various diseases and its increasing antibiotic resistance poses a public health problem. **RESULTS:** Here, we describe a community-driven effort, in which more than 20 experts in *S. Typhimurium* biology and systems biology collaborated to reconcile and expand the *S. Typhimurium* BiGG knowledge-base. The consensus MR was obtained starting from two independently developed MRs for *S. Typhimurium*. Key results of this reconstruction jamboree include i) development and implementation of a community-based workflow for MR annotation and reconciliation; ii) incorporation of thermodynamic information; and iii) use of the consensus MR to identify potential multi-target drug therapy approaches. **CONCLUSION:** Taken together, with the growing number of parallel MRs a structured, community-driven approach will be necessary to maximize quality while increasing adoption of MRs in experimental design and interpretation.

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