

P041 Genetic tools for *Sulfolobus acidocaldarius*
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We have recently developed *Sulfolobus-E. coli* shuttle vectors based on the plasmid pRN1 and the *pyrEF* genes from *S. solfataricus* P2 as selectable marker genes. The developed extrachromosomally replicating vectors were used to study the promoter strength of several promoters in reporter gene experiments and an inducible promoter for *S. acidocaldarius* has been identified. Furthermore we could demonstrate the usefulness of the vectors for the delineation of the minimal replicon of pRN1 and its putative origin of replication.

Additionally we used the uracil selection strategy that had been proven to work reliably with extrachromosomally replicating shuttle vectors to construct vectors for site specific recombination with the *S. acidocaldarius* chromosome. We could demonstrate integration and disintegration of constructs by single crossover events of homologous recombination. It is also possible to use double crossover homologous recombination to obtain targeted gene knockouts in one step in *S. acidocaldarius*. By this method we obtained knockouts of the *trpA* gene and the *saci_1494* gene.