Deciphering the way σ^S-containing RNA polymerase ($E\sigma^S$) targets its promoters in *Escherichia coli*

Dissertation

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1. Gutachter: Prof. Dr. Regine Hengge

2. Gutachter: Prof. Dr. Kürsad Turgay

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For my mother,

to whom this dissertation means so much

Parts of this study have been or will be published in the following journals:

1. **Typas, A.** and Hengge, R. (2005) Differential ability of σ^s and σ^{70} of *Escherichia coli* to utilise promoters containing half or full UP-element sites. ***Mol Microbiol***, **55** (1), 250-60
2. **Typas, A.** and Hengge, R. (2006) Role of the spacer between the -35 and -10 regions in σ^s promoter selectivity in *Escherichia coli*. ***Mol Microbiol,* 59** (3), 1037-51
3. **Typas, A.**, Stella, S., Johnson, R.C. and Hengge, R. (2006) The –35 sequence location and the Fis-sigma factor interface determine σ^S selectivity of the *proP* (P2) promoter in *Escherichia coli*. ***Mol Microbiol,*** in press.
4. **Typas, A.**, Barembruch, C., Possling, A. and Hengge, R. (2006) Stationary phase reorganisation of the *E. coli* transcription machinery by Crl protein, a fine-tuner of σ^s activity and levels. ***EMBO J***, in revision
5. **Typas, A.**, Becker, G. and Hengge R. (2006) The molecular basis of selective promoter activation by the σ^S subunit of RNA polymerase ***Mol. Microbiol,*** invited MicroReview, submitted.
6. **Typas, A.**, Sclavi, B., Buckle, M. and Hengge, R. Differences in promoter binding by the vegetative RNA polymerase $E\sigma^{70}$ and the "stress" RNA polymerase $E\sigma^s$, in preparation.

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