


Bachmann H, Starrenburg MJC, Molenaar D, Kleerebezem M, Van Hylckama Vlieg JET (2012) Microbial domestication signatures of Lactococcus lactis can be reproduced by experimental evolution. *Genome research* **22**: 115–24


Blázquez Ma, Gancedo C (1995) Mode of action of the qcr9 and cat3 mutations in restoring the ability of Saccharomyces cerevisiae tps1 mutants to grow on glucose. *Molecular general genetics MGG* 249: 655–64


Bibliography

Bibliography of the United States of America 104: 15753–15758


Fujita Y (2009) Carbon catabolite control of the metabolic network in Bacillus subtilis. Bioscience Biotechnology and...
Biochemistry 73: 245–259


Bacteriology 181: 5521–5526


Koser SA (1923) Utilization of the salts of organic acids by the colon-aerogenes group. Journal of Bacteriology 8: 493–520


Luyten K, Albertyn J, Skibbe WF, Prior BA, Ramos J, Thevelein JM, Hohmann S (1995) Fpsl , a yeast member of the MIP family of channel proteins , is a facilitator for glycerol uptake and efflux and is inactive under osmotic stress. EMBO Journal 14: 1360–1371


Maier A, Vo B, Boles E, Fuhrmann F, Eckhard V, Günter Fred F (2002) Characterisation of glucose transport in *Saccharomyces cerevisiae* with plasma membrane vesicles (countertransport) and intact cells (initial uptake) with single Hxt1, Hxt2, Hxt3, Hxt4, Hxt6, Hxt7 or Gal2 transporters. *FEMS Yeast Research* 2: 539–550


Reed JL, Palsson BØ (2004) Genome-scale in silico models of *E. coli* have multiple equivalent phenotypic states: assessment of correlated reaction subsets that comprise network states. *Genome Res* **14**: 1797–1805


Bibliography


Solem C, Koebmann B, Jensen PR (2008) The extent of co-metabolism of glucose and galactose by Lactococcus lactis changes with the expression of the lacSZ operon from Streptococcus thermophilus. Biotechnology and applied biochemistry 50: 35–40


Chapter 8


Thomas TD, Ellwood DC, Longyear VMC (1979) Change from homo-to heterolactic fermentation by *Streptococcus lactis* resulting from glucose limitation in anaerobic chemostat cultures. *Journal of bacteriology* 138: 109–117


Veening JW, Hamoen LW, Kuipers OP (2005) Phosphatases modulate the bistable sporulation gene expression pat-
tern in Bacillus subtilis. *Molecular microbiology* 56: 1481–94


Acknowledgements

I would urge you to move on to the summary, which I tried to make readable for layman and if you are still interested, the introduction. Perhaps you could even try the discussion. Still, I would like to take the opportunity to thank the people that have contributed to this thesis.

In the first place I would like to thank Bas, for advising and guiding my research, but also supporting me in finding my own way to grow as a researcher. I would like to thank Frank for very enjoyable discussions and his inspiring enthusiasm. I would like to thank all my coauthors, especially the (co)first authors of the chapters in this thesis Anisha, Johan, Evert and Timo. I owe many thanks to Marit and Erik for all the help with my fermentations in Delft. Unfortunately the work didn’t make it into this thesis, only as far as the cover.

I would like to thank Pınar and all the people in the group for the discussions about biology and the good time I had these years. I would like to thank my students, Bastiaan, Philip and José, for their efforts on my projects as well as all the people that helped me out in the lab, Johan, Koen, José, Marijke and others.

I have greatly enjoyed visiting labs outside of Amsterdam. Many thanks for help, invitations, discussions and an inspiring environment to work to Jack, Pascale and Marit in Delft, Kamran in Oslo, Hildur Æsa in Stockholm, Michael in Madison, Ralf in Berlin, Nils Christian in Oslo and Luis and Maria in Barcelona.

I would like to thank Anneke for very helpful comments on the introduction, discussion and summary and Fien for the fantastic design of the cover.

I would like my friends and family for their support. I would like to thank Han for his contribution to this thesis but more for everything else.
List of Publications

Interplay between Constraints, Objectives, and Optimality for Genome-Scale Stoichiometric Networks
Timo Maarleveld, Meike T Wortel, Brett Olivier, Bas Teusink
PLOS Computational Biology (2015)

Lost in Transition: Startup of Glycolysis Yields Subpopulations of Nongrowing Cells
Johan H van Heerden, Meike T Wortel, Frank J Bruggeman, Joseph J Heijnen, Yves J Bollen, Robert Planqué, Josephus Hulshof, Tom G O’Toole, S Aljoscha Wahl, Bas Teusink
Science (2014)

Fatal Attraction in Glycolysis: How Saccharomyces cerevisiae Manages Sudden Transitions to High Glucose
Johan H van Heerden, Meike T Wortel, Frank J Bruggeman, Joseph J Heijnen, Yves J Bollen, Robert Planqué, Josephus Hulshof, Tom G O’Toole, S Aljoscha Wahl, Bas Teusink
Microreview in Microbial Cell (2014)

Metabolic States with Maximal Specific Rate Carry Flux through an Elementary Flux Mode
Meike T Wortel, Han Peters, Josephus Hulshof, Bas Teusink, Frank J Bruggeman
FEBS Journal (2014)

Metabolic Shifts: A Fitness Perspective for Microbial Cell Factories
Meike T Wortel*, Anisha Goel*, Douwe Molenaar, Bas Teusink
Biotechnology letters (2012)

The Timescale of Phenotypic Plasticity and its Impact on Competition in Fluctuating Environments
Maayke Stomp, Mark A Dijk, Harriët MJ van Overzee, Meike T Wortel, Corrien AM Signon, Martijn Egas, Hans Hoogveld, Herman J Gons, Jef Huisman
The American Naturalist (2008)