

## List of publications

2020-06-25

### Peer-reviewed original articles

1. Robinson JL, Kocabaş P, Wang H, Cholley PE, Cook D, Nilsson A, Anton M, Ferreira R, Domenzain I, Billa V, Limeta A, Hedin A, Gustafsson J, **Kerkhoven EJ**, Svensson LT, Palsson BO, Mardinoglu A, Hansson L, Uhlén M, Nielsen J (2020) An atlas of human metabolism. *Science Signaling* 13: 624. doi:[10.1126/scisignal.aaz1482](https://doi.org/10.1126/scisignal.aaz1482)
2. Lopes HJS, Bonturi N, **Kerkhoven EJ**, Miranda EA, Lahtvee PJ (2020) C/N ratio and carbon source-dependent lipid production profiling in *Rhodotorula toruloides*. *Appl Microbiol Biotechnol*. 104: 2639–49. doi:[10.1007/s00253-020-10386-5](https://doi.org/10.1007/s00253-020-10386-5)
3. Lubuta P, Workman M, **Kerkhoven EJ\***, Workman CT\* (2019) Investigating the Influence of Glycerol on the Utilization of Glucose in *Yarrowia lipolytica* Using RNA-Seq-Based Transcriptomics. *G3 Genes, Genomes, Genet.* g3.400469.2019. doi:[10.1534/g3.119.400469](https://doi.org/10.1534/g3.119.400469) \*co-corresponding author
4. Tiukova IA, Prigent S, Nielsen J, Sandgren M, **Kerkhoven EJ** (2019) Genome-scale model of *Rhodotorula toruloides* metabolism. *Biotechnol Bioeng*. 116: 3396–3408. doi:[10.1002/bit.27162](https://doi.org/10.1002/bit.27162)
5. Tiukova IA, Brandenburg J, Blomqvist J, Samples S, Mikkelsen N, Skaugen M, Arntzen MØ, Nielsen J, Sandgren M, **Kerkhoven EJ** (2019) Proteome analysis of xylose metabolism in *Rhodotorula toruloides* during lipid production. *Biotechnol Biofuels* 12: 1–17. doi:[10.1186/s13068-019-1478-8](https://doi.org/10.1186/s13068-019-1478-8)
6. Johnston K, Kim D-H, **Kerkhoven EJ**, Burchmore R, Barrett MP, Achcar F (2019) Mapping the metabolism of five amino acids in bloodstream form *Trypanosoma brucei* using U-13C-labelled substrates and LC-MS. *Biosci Rep*. 39: 1–17. doi:[10.1042/BSR20181601](https://doi.org/10.1042/BSR20181601)
7. Lu H, Li F, Sánchez BJ, Zhu Z, Li G, Domenzain I, Marcišauskas S, Anton PM, Lappa D, Lieven C, Beber ME, Sonnenschein N, **Kerkhoven EJ**, Nielsen J (2019) A consensus *S. cerevisiae* metabolic model Yeast8 and its ecosystem for comprehensively probing cellular metabolism. *Nat Commun*. 10: 3586. doi:[10.1038/s41467-019-11581-3](https://doi.org/10.1038/s41467-019-11581-3)
8. Sánchez BJ, Li F, **Kerkhoven EJ**, Nielsen J (2019) SLIMEr: probing flexibility of lipid metabolism in yeast with an improved constraint-based modeling framework. *BMC Syst Biol*. 13: 4. doi:[10.1186/s12918-018-0673-8](https://doi.org/10.1186/s12918-018-0673-8)
9. Pomraning KR, Bredeweg EL, **Kerkhoven EJ**, Barry K, Haridas S, Hundley H, LaButti K, Lipzen A, Yan M, Magnuson JK, Simmons BA, Grigoriev IV, Nielsen J, Baker SE (2018) Regulation of Yeast-to-Hyphae Transition in *Yarrowia lipolytica*. *mSphere*. 3: 1–18. doi:[10.1128/mSphere.00541-18](https://doi.org/10.1128/mSphere.00541-18)
10. Wang H, Marcišauskas S, Sánchez BJ, Domenzain I, Hermansson D, Agren R, Nielsen J, **Kerkhoven EJ** (2018) RAVEN 2.0: A versatile toolbox for metabolic network reconstruction and a case study on *Streptomyces coelicolor*. *PLOS Comput Biol*. 14: e1006541. doi:[10.1371/journal.pcbi.1006541](https://doi.org/10.1371/journal.pcbi.1006541)
11. Sánchez BJ, Zhang C, Nilsson A, Lahtvee P, **Kerkhoven EJ**, Nielsen J (2017) Improving the phenotype predictions of a yeast genome-scale metabolic model by incorporating enzymatic constraints. *Mol Syst Biol*. 13: 935. doi:[10.15252/msb.20167411](https://doi.org/10.15252/msb.20167411)
12. **Kerkhoven EJ**, Kim Y-M, Wei S, Nicora CD, Fillmore TL, Purvine SO, Webb-Robertson BJ, Smith RD, Baker SE, Metz TO, Nielsen J (2017) Leucine Biosynthesis Is Involved in Regulating High Lipid Accumulation in *Yarrowia lipolytica*. *MBio*. 8: e00857-17. doi:[10.1128/mBio.00857-17](https://doi.org/10.1128/mBio.00857-17)
13. Bredeweg EL, Pomraning KR, Dai Z, Nielsen J, **Kerkhoven EJ**, Baker SE (2017) A molecular genetic toolbox for *Yarrowia lipolytica*. *Biotechnol Biofuels*. 10: 2. doi:[10.1186/s13068-016-0687-7](https://doi.org/10.1186/s13068-016-0687-7)
14. Irani ZA, **Kerkhoven EJ**, Shojaosadati SA, Nielsen J (2016) Genome-scale metabolic model of *Pichia pastoris* with native and humanized glycosylation of recombinant proteins. *Biotechnol Bioeng*. 113: 961–969. doi:[10.1002/bit.25863](https://doi.org/10.1002/bit.25863)
15. **Kerkhoven EJ**, Pomraning KR, Baker SE, Nielsen J (2016) Regulation of amino-acid metabolism controls flux to lipid accumulation in *Yarrowia lipolytica*. *NPJ Syst Biol Appl*. 2: 16005. doi:[10.1038/npijsba.2016.5](https://doi.org/10.1038/npijsba.2016.5)
16. Creek DJ, Mazet M, Achcar F, Anderson J, Kim D-H, Kamour R, Morand P, Millerioux Y, Biran M, **Kerkhoven EJ**, Chokkathukalam A, Weidt SK, Burgess KEV, Breitling R, Watson DG, Bringaud F, Barrett MP (2015)

Probing the Metabolic Network in Bloodstream-Form *Trypanosoma brucei* Using Untargeted Metabolomics with Stable Isotope Labelled Glucose. PLoS Pathog. 11: e1004689. doi:[10.1371/journal.ppat.1004689](https://doi.org/10.1371/journal.ppat.1004689)

17. Hai Y, **Kerkhoven EJ**, Barrett MP, Christianson DW (2015) Crystal Structure of an Arginase-like Protein from *Trypanosoma brucei* That Evolved without a Binuclear Manganese Cluster. Biochemistry. 54: 458–471. doi:[10.1021/bi501366a](https://doi.org/10.1021/bi501366a)
18. Shameer S, Logan-klumpler FJ, Vinson F, Cottret L, Merlet B, Achcar F, Boshart M, Berriman M, Breitling R, Bringaud R, Bütikofer P, Cattanaach AM, Bannerman-Chukualim B, Creek DJ, Crouch K, de Koning HP, Denise H, Ebikeme C, Fairlamb AH, Ferguson MAJ, Ginger ML, Hertz-Fowler C, **Kerkhoven EJ**, Mäaser P, Michels PAM, Nayak A, Nes DW, Nolan DP, Olsen C, Silva-Franco F, Smith TK, Taylor MC, Tielens AGM, Urbaniak MC, van Hellemond JJ, Vincent IM, Wilkinson SR, Wyllie S, Opperdoes FR, Barrett MP, Jourdan F (2015) TrypanoCyc: a community-led biochemical pathways database for *Trypanosoma brucei*. Nucleic Acids Res. 43: D637–D644. doi:[10.1093/nar/gku944](https://doi.org/10.1093/nar/gku944)
19. Ledesma-Amaro R, **Kerkhoven EJ**, Revuelta JL, Nielsen J (2014) Genome scale metabolic modeling of the riboflavin overproducer *Ashbya gossypii*. Biotechnol Bioeng. 111: 1191–1199. doi:[10.1002/bit.25167](https://doi.org/10.1002/bit.25167)
20. **Kerkhoven EJ**, Achcar F, Alibu VP, Burchmore RJ, Gilbert IH, Trybiło M, Driessen NN, Gilbert D, Breitling R, Bakker BM, Barrett MP (2013) Handling Uncertainty in Dynamic Models: The Pentose Phosphate Pathway in *Trypanosoma brucei*. PLoS Comput Biol. 9: e1003371. doi:[10.1371/journal.pcbi.1003371](https://doi.org/10.1371/journal.pcbi.1003371)
21. Achcar F, **Kerkhoven EJ**, Bakker BM, Barrett MP, Breitling R (2012) Dynamic modelling under uncertainty: the case of *Trypanosoma brucei* energy metabolism. PLoS Comput Biol. 8: e1002352. doi:[10.1371/journal.pcbi.1002352](https://doi.org/10.1371/journal.pcbi.1002352)
22. Haanstra JR\*, **Kerkhoven EJ\***, van Tuijl A, Blits M, Wurst M, van Nuland R, Albert MA, Michels PAM, Bouwman J, Clayton C, Westerhoff HV, Bakker BM (2011). A domino effect in drug action: from metabolic assault towards parasite differentiation. Mol Microbiol. 79: 94–108. doi:[10.1111/j.1365-2958.2010.07435.x](https://doi.org/10.1111/j.1365-2958.2010.07435.x)  
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### Research review articles

1. Doughty T, **Kerkhoven EJ** (2020) Extracting Novel Hypotheses and Findings From RNA-seq Data. FEMS Yeast Res. 20: 1–7. doi:[10.1093/femsyr/foaa007](https://doi.org/10.1093/femsyr/foaa007)
2. Shi T, Huang H, **Kerkhoven EJ**, Ji X (2018) Advancing metabolic engineering of *Yarrowia lipolytica* using the CRISPR/Cas system. Appl Microbiol Biotechnol. 102: 9541–9548. doi:[10.1007/s00253-018-9366-x](https://doi.org/10.1007/s00253-018-9366-x)
3. Zhou YJ, **Kerkhoven EJ**, Nielsen J (2018) Barriers and opportunities in bio-based production of hydrocarbons. Nat Energy. 3: 925–35. doi:[10.1038/s41560-018-0197-x](https://doi.org/10.1038/s41560-018-0197-x)
4. **Kerkhoven EJ**, Lahtvee P-J, Nielsen J (2015). Applications of computational modeling in metabolic engineering of yeast. FEMS Yeast Res. 15: 1–13. doi:[10.1111/1567-1364.12199](https://doi.org/10.1111/1567-1364.12199)
5. Achcar F, **Kerkhoven EJ**, Barrett MP (2014) *Trypanosoma brucei*: meet the system. Curr Opin Microbiol. 20: 162–9. doi:[10.1016/j.mib.2014.06.007](https://doi.org/10.1016/j.mib.2014.06.007)

### Book chapters

1. **Kerkhoven EJ** (2019) Modeling Lipid Metabolism in Yeast. In: Geiger O, editor. Biogenesis of Fatty Acids, Lipids and Membranes Handbook of Hydrocarbon and Lipid Microbiology. Springer International Publishing; pp. 375–388. doi:[10.1007/978-3-319-50430-8\\_9](https://doi.org/10.1007/978-3-319-50430-8_9)
2. Achcar F, Fadda A, Haanstra JR, **Kerkhoven EJ**, Kim D-H, Leroux AE, Papamarkou T, Rojas F, Bakker BM, Barrett MP, Clayton C, Girolami M, Krauth-Siegel RL, Matthews KR, Breitling R (2014). The silicon trypanosome: a test case of iterative model extension in systems biology. In: Poole RK, editor. Advances in microbial physiology. 1st ed. Elsevier Ltd.; pp. 115–43. doi:[10.1016/B978-0-12-800143-1.00003-8](https://doi.org/10.1016/B978-0-12-800143-1.00003-8)

## *Preprints*

1. Sulheim S, Kumelj T, van Dissel D, Salehzadeh-Yazdi A, Du C, Nieselt K, Almaas E, Wentzel A & **Kerkhoven EJ** (2020) Genome-scale Model Constrained by Proteomics Reveals Metabolic Changes in *Streptomyces coelicolor* M1152 Compared to M145. bioRxiv: 796722. doi:[10.1101/796722](https://doi.org/10.1101/796722)
2. Lu H, Zhu Z, **Kerkhoven EJ** & Nielsen J (2019) FALCONET: an R package to accelerate automatic visualisation of genome scale metabolic models. bioRxiv: 662056. doi:[10.1101/662056](https://doi.org/10.1101/662056)