

Publication List

Michael T. Wolfinger

5th April, 2023

A) Submitted Manuscripts / Preprints

1. Nitchakan Darai, Kowit Hengphasatporn, Peter Wolschann, Michael T. Wolfinger, Yasuteru Shigeta, Thanyada Rungrotmongkol, and Ryuhei Harada. A Structural Refinement Technique for Protein-RNA Complexes Based on a Combination of AI-based Modeling and Flexible Docking. *Manuscript submitted*, 2023
2. Jakob McBroome, Adriano de Bernardi Schneider, Cornelius Roemer, Michael T. Wolfinger, Angie S Hinrichs, Aine N O'Toole, Chris Ruis, Yatish Turakhia, Andrew Rambaut, and Russell Corbett-Detig. Automated Agnostic Designation of Pathogen Lineages. *bioRxiv*, 2023, doi:10.1101/2023.02.03.527052
3. Darren Gemmill, Corey Nelson, Maulik Badmalia, Higor Pereira, Michael T. Wolfinger, and Trushar Patel. The 3' terminal region of Zika virus RNA contains a conserved G-quadruplex and is unfolded by human DDX17. *Manuscript submitted*, 2022
4. Benoit Besson, Gijs J. Overheul, Michael T. Wolfinger, Sandra Junglen, and Ronald P. van Rij. Pan-flavivirus analysis reveals that the insect-specific Kamiti River virus produces a new subgenomic RNA and high amounts of 3' UTR-derived siRNAs. *bioRxiv*, 2022, doi:10.1101/2022.08.18.504478

B) Refereed Journal Papers

5. Tyler Mrozowich, Sean M. Park, Maria Waldl, Amy Henrickson, Scott Tersteeg, Corey R. Nelson, Anneke Deklerk, Borries Demeler, Ivo L. Hofacker, Michael T. Wolfinger, and Trushar R. Patel. Investigating RNA-RNA interactions through computational and biophysical analysis. *Nucleic Acids Res.*, Mar 2023, doi:10.1093/nar/gkad223. PMID: 36999609
6. Roman Ochsenreiter and Michael T. Wolfinger. Strukturierte RNAs in Viren. *BIOspektrum*, 02.23:156, Mar 2023, doi:10.1007/s12268-023-1907-x. In German
7. Nitchakan Darai, Panupong Mahalapbutr, Peter Wolschann, Vannajan Sanghiran Lee, Michael T. Wolfinger, and Thanyada Rungrotmongkol. Theoretical studies on RNA recognition by Musashi 1 RNA-binding protein. *Sci. Rep.*, 12:12137, Jul 2022, doi:10.1038/s41598-022-16252-w. PMCID: PMC9287312
8. Christoph Flamm, Julia Wielach, Michael T. Wolfinger, Stefan Badelt, Ronny Lorenz, and Ivo L. Hofacker. Caveats to deep learning approaches to RNA secondary structure prediction. *Front. Bioinform.*, 2:835422, Jul 2022, doi:10.3389/fbinf.2022.835422
9. Marlena Rozner, Ella Nukarinen, Michael T. Wolfinger, Fabian Amman, Wolfram Weckwerth, Udo Bläsi, and Elisabeth Sonnleitner. Rewiring of Gene Expression in *Pseudomonas aeruginosa* During Diauxic Growth Reveals an Indirect Regulation of the MexGHI-OpmD Efflux Pump by Hfq. *Front. Microbiol.*, 13:919539, Jun 2022, doi:10.3389/fmicb.2022.919539. PMCID: PMC9272787
10. Lena S. Kutschera and Michael T. Wolfinger. Evolutionary traits of Tick-borne encephalitis virus: Pervasive RNA structure conservation and molecular epidemiology. *Virus Evol.*, 8(1), Jun 2022, doi:10.1093/ve/veac051. PMCID: PMC9272599
11. Michael H. D'Souza, Tyler Mrozowich, Maulik D. Badmalia, Mitchell Geeraert, Angela Frederickson, Amy Henrickson, Borries Demeler, Michael T. Wolfinger, and Trushar R. Patel. Biophysical Characterisation of Human LincRNA-p21 Sense and Antisense Alu Inverted Repeats. *Nucleic Acids Res.*, May 2022, doi:10.1093/nar/gkac414. PMCID: PMC9177966
12. Devadatta Gosavi, Iwona Wower, Irene K. Beckmann, Ivo L. Hofacker, Jacek Wower, Michael T. Wolfinger, and Joanna Sztuba-Solinska. Insight into the secondary and tertiary structure of the Bovine Viral Diarrhea Virus Internal Ribosome Entry Site. *RNA Biol.*, 19:496–506, Mar 2022, doi:10.1080/15476286.2022.2058818. PMCID: PMC8986297
13. Anastasia Cianciulli Sesso, Branislav Lilić, Fabian Amman, Michael T. Wolfinger, Elisabeth Sonnleitner, and Udo Bläsi. Gene Expression Profiling of *Pseudomonas aeruginosa* Upon Exposure to Colistin and Tobramycin. *Front. Microbiol.*, 12:937, Apr 2021, doi:10.3389/fmicb.2021.626715. PMCID: PMC8120321

14. Hayato Harima, Yasuko Orba, Shiho Torii, Yongjin Qiu, Masahiro Kajihara, Yoshiki Eto, Naoya Matsuta, Hang'ombe Bernard M., Yuki Eshita, Kentaro Uemura, Keita Matsuno, Michihito Sasaki, Kentaro Yoshii, Ryo Nakao, William W. Hall, Ayato Takada, Takashi Abe, Michael T. Wolfinger, Martin Simmunza, and Hirofumi Sawa. An African tick flavivirus forming an independent clade exhibits unique exoribonuclease-resistant RNA structures in the genomic 3'-untranslated region. *Sci. Rep.*, 11:4883, Mar 2021, doi:10.1038/s41598-021-84365-9. PMCID: PMC7921595
15. Thomas Spicher, Markus Delitz, Adriano de Bernardi Schneider, and Michael T. Wolfinger. Dynamic Molecular Epidemiology Reveals Lineage-Associated Single-Nucleotide Variants That Alter RNA Structure in Chikungunya Virus. *Genes*, 12(2):239, Feb 2021, doi:10.3390/genes12020239. PMCID: PMC7914560
16. Alexandra Popa, Jakob-Wendelin Genger, Michael D. Nicholson, Thomas Penz, Daniela Schmid, Stephan W Aberle, Benedikt Agerer, Alexander Lercher, Lukas Endler, Henrique Colaco, Mark Smyth, Michael Schuster, Miguel L. Grau, Francisco Martínez-Jiménez, Oriol Pich, Wegene Borena, Erich Pawelka, Zsolia Keszei, Martin Senekowitsch, Jan Laine, Judith H Aberle, Monika Redlberger-Fritz, Mario Karolyi, Alexander Zoufaly, Sabine Maritschnik, Martin Borkovec, Peter Hufnagl, Manfred Nairz, Günter Weiss, Michael T. Wolfinger, Dorothee von Laer, Giulio Superti-Furga, Nuria Lopez-Bigas, Elisabeth Puchhammer-Stöckl, Franz Allerberger, Franziska Michor, Christoph Bock, and Andreas Bergthaler. Genomic epidemiology of superspreading events in Austria reveals mutational dynamics and transmission properties of SARS-CoV-2. *Sci. Transl. Med.*, 12, Dec 2020, doi:10.1126/scitranslmed.abe2555. PMCID: PMC7857414
17. Christida E. Wastika, Hayato Harima, Michihito Sasaki, Bernard M. Hang'ombe, Yuki Eshita, Qiu Yongjin, William W. Hall, Michael T. Wolfinger, Hirofumi Sawa, and Yasuko Orba. Discoveries of Exoribonuclease-Resistant Structures of Insect-Specific Flaviviruses Isolated in Zambia. *Viruses*, 12:1017, Sep 2020, doi:10.3390/v12091017. PMCID: PMC7551683
18. Elisabeth Sonnleitner, Petra Pusic, Michael T. Wolfinger, and Udo Bläsi. Distinctive regulation of carbapenem susceptibility in *Pseudomonas aeruginosa* by Hfq. *Front. Microbiol.*, 11:1001, May 2020, doi:10.3389/fmicb.2020.01001. PMCID: PMC7264166
19. Adriano de Bernardi Schneider, Roman Ochsenreiter, Reilly Hostager, Ivo L. Hofacker, Daniel Janies, and Michael T. Wolfinger. Updated Phylogeny of Chikungunya Virus Suggests Lineage-Specific RNA Architecture. *Viruses*, 11:798, Aug 2019, doi:10.3390/v11090798. PMCID: PMC6784101
20. Adriano de Bernardi Schneider and Michael T. Wolfinger. Musashi binding elements in Zika and related Flavivirus 3'UTRs: A comparative study *in silico*. *Sci. Rep.*, 9(1):6911, May 2019, doi:10.1038/s41598-019-43390-5. PMCID: PMC6502878
21. Flavia Bassani, Isabelle Anna Zink, Thomas Pribasnik, Michael T. Wolfinger, Alice Romagnoli, Armin Resch, Christa Schleper, Udo Bläsi, and Anna La Teana. Indications for a moonlighting function of translation factor alF5A in the crenarchaeum *Sulfolobus solfataricus*. *RNA Biol.*, 16(5):675–685, May 2019, doi:10.1080/15476286.2019.1582953. PMCID: PMC6546411
22. Roman Ochsenreiter, Ivo L. Hofacker, and Michael T. Wolfinger. Functional RNA Structures in the 3'UTR of Tick-borne, Insect-specific and No Known Vector Flaviviruses. *Viruses*, 11:298, Mar 2019, doi:10.3390/v11030298. PMCID: PMC6466055
23. Petra Pusic, Elisabeth Sonnleitner, Beatrice Krennmayr, Dorothea Agnes Heitzinger, Michael T. Wolfinger, Armin Resch, and Udo Bläsi. Harnessing Metabolic Regulation to increase Hfq-dependent Antibiotic Susceptibility in *Pseudomonas aeruginosa*. *Front. Microbiol.*, 9:2709, Nov 2018, doi:10.3389/fmicb.2018.02709. PMCID: PMC6237836
24. Maria Waldl, Bernhard C. Thiel, Roman Ochsenreiter, Alexander Holzenleiter, João Victor de Araujo Oliveira, Maria Emília M.T. Walter, Michael T. Wolfinger, and Peter F. Stadler. TERribly Difficult: Searching for Telomerase RNAs in Saccharomycetes. *Genes*, 9(8):372, Jul 2018, doi:10.3390/genes9080372. PMCID: PMC6115765
25. Michael T. Wolfinger, Christoph Flamm, and Ivo L. Hofacker. Efficient computation of cotranscriptional RNA-ligand interaction dynamics. *Methods*, 143:70–76, Jul 2018, doi:10.1016/j.ymeth.2018.04.036. PMID: 29730250
26. Sven Findeiß, Stefan Hammer, Michael T. Wolfinger, Felix Kühnl, Christoph Flamm, and Ivo L. Hofacker. In silico design of ligand triggered RNA switches. *Methods*, 143:90–101, Jul 2018, doi:10.1016/j.ymeth.2018.04.003. PMID: 29660485

27. Elisabeth Sonnleitner, Alexander Wulf, Sébastien Campagne, Xue-Yuan Pei, Michael T. Wolfinger, Giada Forlani, Konstantin Prindl, Laetitia Abdou, Armin Resch, Frederic Allain, Ben Luisi, Henning Urlaub, and Udo Bläsi. Interplay between the catabolite repression control protein Crc, Hfq and RNA in Hfq-dependent translational regulation in *Pseudomonas aeruginosa*. *Nucleic Acids Res.*, 46:1470–1485, Feb 2018, doi:10.1093/nar/gkx1245. PMCID: PMC5815094
28. Muralidhar Tata, Fabian Amman, Vinay Pawar, Michael T. Wolfinger, Siegfried Weiss, Susanne Häussler, and Udo Bläsi. The anaerobically induced sRNA Pail affects denitrification in *Pseudomonas aeruginosa* PA14. *Front. Microbiol.*, 8:2312, Nov 2017, doi:10.3389/fmicb.2017.02312. PMCID: PMC5703892
29. Birgit Märten, Linlin Hou, Fabian Amman, Michael T. Wolfinger, Elena Evguenieva-Hackenberg, and Udo Bläsi. The SmAP1/2 proteins of the crenarchaeon *Sulfolobus solfataricus* interact with the exosome and stimulate A-rich tailing of transcripts. *Nucleic Acids Res.*, 45:7938–7949, Jul 2017, doi:10.1093/nar/gkx437. PMCID: PMC5570065
30. Christina Helmling, Anna Wacker, Michael T. Wolfinger, Ivo L. Hofacker, Martin Hengsbach, Boris Fürtig, and Harald Schwalbe. NMR structural profiling of transcriptional intermediates reveals riboswitch regulation by metastable RNA conformations. *J. Am. Chem. Soc.*, 139(7):2647–2656, Feb 2017, doi:10.1021/jacs.6b10429. PMID: 28134517
31. Petra Pusic, Muralidhar Tata, Michael T. Wolfinger, Elisabeth Sonnleitner, Susanne Häussler, and Udo Bläsi. Cross-regulation by CrcZ RNA controls anoxic biofilm formation in *Pseudomonas aeruginosa*. *Sci. Rep.*, 6(39621), Dec 2016, doi:10.1038/srep39621. PMCID: PMC5175159
32. Mansoured Tajadodd, Andrea Tanzer, Konstantin Licht, Michael T. Wolfinger, Stefan Badelt, Florian Huber, Oliver Pusch, Sandy Schopoff, Ivo L. Hofacker, and Michael F. Jantsch. Transcriptome-wide effects of inverted SINEs on gene expression and their impact on RNA Polymerase II activity. *Genome Biol.*, 17:220, Oct 2016, doi:10.1186/s13059-016-1083-0. PMCID: PMC5080714
33. Martin Hölzer, Verena Krähling, Fabian Amman, Emanuel Barth, Stephan H. Bernhart, Victor Carmelo, Maximilian Collatz, Gero Doose, Florian Eggenhofer, Jan Ewald, Jörg Fallmann, Lasse M. Feldhahn, Markus Fricke, Juliane Gebauer, Andreas J. Gruber, Franziska Hufsky, Henrike Indrischek, Sabina Kanton, Jörg Linde, Nelly Mostajo, Roman Ochsenreiter, Konstantin Riege, Lorena Rivarola-Duarte, Abdullah H. Sahyoun, Sita J. Saunders, Stefan E. Seemann, Andrea Tanzer, Bertram Vogel, Stefanie Wehner, Michael T. Wolfinger, Rolf Backofen, Jan Gorodkin, Ivo Grosse, Ivo L. Hofacker, Steve Hoffmann, Christoph Kaleta, Peter F. Stadler, Stephan Becker, and Manja Marz. Differential transcriptional responses to Ebola and Marburg virus infection in bat and human cells. *Sci. Rep.*, 6(34589), Oct 2016, doi:10.1038/srep34589. PMCID: PMC5054393
34. Martina Sauert, Michael T. Wolfinger, Oliver Vesper, Christian Müller, Konstantin Byrgazov, and Isabella Moll. The MazF-regulon: A toolbox for the post-transcriptional stress response in *Escherichia coli*. *Nucleic Acids Res.*, 44(14):6660–6675, Aug 2016, doi:10.1093/nar/gkw115. PMCID: PMC5001579
35. Ronny Lorenz, Michael T. Wolfinger, Andrea Tanzer, and Ivo L. Hofacker. Predicting RNA structures from sequence and probing data. *Methods*, 103:86–98, Jul 2016, doi:10.1016/j.ymeth.2016.04.004. PMID: 27064083
36. Muralidhar Tata, Michael T. Wolfinger, Fabian Amman, Nicole Roschanski, Andreas Dötsch, Elisabeth Sonnleitner, Susanne Häussler, and Udo Bläsi. RNA-Seq based transcriptional profiling of *Pseudomonas aeruginosa* PA14 after short- and long-term anoxic cultivation in synthetic cystic fibrosis sputum medium. *PLoS ONE*, 11(1):e0147811, Jan 2016, doi:10.1371/journal.pone.0147811. PMCID: PMC4731081
37. Ronny Lorenz, Dominik Luntzer, Ivo L. Hofacker, Peter F. Stadler, and Michael T. Wolfinger. SHAPE directed RNA folding. *Bioinformatics*, 32:145–147, Jan 2016, doi:10.1093/bioinformatics/btv523. PMCID: PMC4681990
38. Sanja Antic, Michael T. Wolfinger, Anna Skucha, Stefanie Hosiner, and Silke Dörner. General and miRNA-mediated mRNA degradation occurs on ribosome complexes in *Drosophila* cells. *Mol. Cell. Biol.*, pages MCB–01346, Jul 2015, doi:10.1128/MCB.01346-14. PMCID: PMC4456442
39. Michael T. Wolfinger, Jörg Fallmann, Florian Eggenhofer, and Fabian Amman. ViennaNGS: A toolbox for building efficient next-generation sequencing analysis pipelines. *F1000Research*, 4(50), Feb 2015, doi:10.12688/f1000research.6157.2. PMCID: PMC4513691
40. Martin Mann, Marcel Kucharik, Christoph Flamm, and Michael T. Wolfinger. Memory efficient RNA energy landscape exploration. *Bioinformatics*, 30:2584–2591, Sep 2014, doi:10.1093/bioinformatics/btu337. PMCID: PMC4155248

41. Fabian Amman, Michael T. Wolfinger, Ronny Lorenz, Ivo L. Hofacker, Peter F. Stadler, and Sven Findeiß. TSSAR: TSS annotation regime for dRNA-seq data. *BMC Bioinformatics*, 15(1), Mar 2014, doi:10.1186/1471-2105-15-89. PMCID: PMC4098767
42. Ivo L. Hofacker, Christoph Flamm, Michael Heine, Michael T. Wolfinger, Gerik Scheuermann, and Peter F. Stadler. BarMap: RNA folding on dynamic energy landscapes. *RNA*, 16:1308–1316, Jul 2010, doi:10.1261/rna.2093310. PMCID: PMC2885680
43. Michael Geis, Christoph Flamm, Michael T. Wolfinger, A. Tanzer, Ivo L. Hofacker, Martin Middendorf, Christian Mandl, Peter F. Stadler, and Caroline Thurner. Folding kinetics of large RNAs. *J. Mol. Biol.*, 379(1):160–173, Mar 2008, doi:10.1016/j.jmb.2008.02.064. PMID: 18440024
44. Michael T. Wolfinger, Sebastian Will, Ivo L. Hofacker, Rolf Backofen, and Peter F. Stadler. Exploring the lower part of discrete polymer model energy landscapes. *Europhys. Lett.*, 74(4):726–732, May 2006, doi:10.1209/epl/i2005-10577-0
45. Michael T. Wolfinger, W. Andreas Svrcek-Seiler, Christoph Flamm, Ivo L. Hofacker, and Peter F. Stadler. Efficient computation of RNA folding dynamics. *J. Phys. A: Math. Gen.*, 37(17):4731–4741, Apr 2004, doi:10.1088/0305-4470/37/17/005
46. Christoph Flamm, Ivo L. Hofacker, Peter F. Stadler, and Michael T. Wolfinger. Barrier trees of degenerate landscapes. *Z. Phys. Chem.*, 216:155–173, Jan 2002, doi:10.1524/zpch.2002.216.2.155

C) Refereed Conference Proceedings

47. Maria Waldl, Sebastian Will, Michael T. Wolfinger, Ivo L. Hofacker, and Peter F. Stadler. Bi-alignments as Models of Incongruent Evolution of RNA Sequence and Secondary Structure. In *Computational Intelligence Methods for Bioinformatics and Biostatistics*, pages 159–170. Springer International Publishing, Dec 2020. doi:10.1007/978-3-030-63061-4_15
48. Sebastian Pötzsch, Gerik Scheuermann, Peter F. Stadler, Michael T. Wolfinger, and Christoph Flamm. Visualization of lattice-based protein folding simulations. In *IV '06: Proceedings of the conference on Information Visualization*, pages 89–94, Washington, DC, USA, Jul 2006. IEEE Computer Society. doi:10.1109/IV.2006.127

D) Refereed Conference Abstracts

49. Darren L. Gemmill, Higor S Pereira, Maulik D. Badamalia, Corey R. Nelson, Michael T. Wolfinger, and Trushar R. Patel. Identification and characterisation of G-quadruplexes from viral genomes. *Biophysical J.*, 122(3):444a, Feb 2023, doi:10.1016/j.bpj.2022.11.2395
50. Sean M. Park, Tyler Mrozowich, Michael T. Wolfinger, and Trushar R. Patel. Investigating Japanese encephalitis virus long-range terminal region interactions. *Biophys. J.*, 121(3):206A, Feb 2022, doi:10.1016/j.bpj.2021.11.1703
51. Tyler Mrozowich, Sean M. Park, Michael T. Wolfinger, and Trushar R. Patel. Investigating flaviviral genomic cyclization. *Biophysical J.*, 121(3):311a, Feb 2022, doi:10.1016/j.bpj.2021.11.1203
52. Adriano de Bernardi Schneider and Michael T. Wolfinger. The role of arbovirus genome untranslated regions on neurotropism. *Int. J. Infect. Dis.*, 79:142, Feb 2019, doi:10.1016/j.ijid.2018.11.347

E) Book Chapters

53. Michael T. Wolfinger, Roman Ochsenreiter, and Ivo L. Hofacker. Functional RNA Structures in the 3'UTR of Mosquito-Borne Flaviviruses. In Dmitrij Frishman and Manja Marz, editors, *Virus Bioinformatics*, pages 65–100. Chapman and Hall/CRC Press, 2021

F) Outreach Articles

54. Adriano de Bernardi Schneider and Michael T. Wolfinger. Preventing disease outbreaks with computational biology, how far can we go? *NCT CBNW Newsletter*, 58, Jun 2018, doi:10.5281/zenodo.1463018

G) Theses

55. Michael T. Wolfinger. *Energy Landscapes of Biopolymers*. PhD thesis, Universität Wien, Oct 2004
56. Michael T. Wolfinger. The Energy Landscape of RNA Folding. Master's thesis, Universität Wien, Mar 2001