Publications - Sylvain Tollis - January 1st, 2022

Peer-reviewed scientific articles

In preparation:

- **Tollis, S.**†, Palou, R., Munawar, M., Thattikota, Y., and Tyers, M. (expected submission early 2022) Glucose availability modulates cell size through Msn2/4-dependent control of Swi6 expression in budding yeast. *In preparation for Science. (†): corresponding author.*
- Aaltonen, N., Kyykallio, H., **Tollis, S.,** Capra, J., Oikari, S., Heldin, P. and Rilla, K. (expected submission early 2022) MCF10CA breast cancer utilize hyaluronan-rich trails to control collective migration. *In preparation for AACR Cancer Research.*
- Lyst, M., Zhang, L., Alexander-Howden, B., **Tollis, S.**, St-Cyr, D., van der Sloot, A.M., Tyers, M., and Bird, A. (expected submission early 2022) Screening for inhibitors of an autism-relevant protein-protein interaction". *In preparation for PLoS one.*
- Rizzotto, R., **Tollis, S.**, Pham, N.T., Zheng, Y., Abada, A., Wildenhain, J., Arulanandama, J., Auer, M., Tyers, M., and Schirmer, E.C. (expected submission spring 2022) NET50/DHRS7 and estradiol propionate correct nuclear size defects in PC3 prostate cancer cells. *In preparation for BBRC journal.*
- Cook, M., **Tollis, S.**, Cheng, J., Caudy, A., Rosebrock, A, Tyers, M. (expected submission spring 2022) A giant genetic network mediates condition-dependent control of cell size. *In preparation for Cell*.
- Cheng, J, **Tollis, S.**, Fayet-lebaron, E., Blake, D., Tang, X., and Tyers, M. (expected submission spring 2022) Nnk1-induced Gdh2 focus formation presents a novel protein conformation-based epigenetic regulation. *In preparation for Cell Metabolism*
- Ghazal, G., **Tollis, S.**, Gagnon, J., Coulombe-Huntingdon, J and Tyers, M. (expected submission 2022) A novel non-coding RNA affecting the G1/S transition through the expression of chromatin remodeling genes. *In preparation for RNA Journal*

Submitted/in revision:

1. Litsios, A., Goswami, P., Terpstra, H.M., Coffin, C., Vuillemenot, L-A., Rovetta, M., Ghazal, G., Guerra, P., Buczak, K., Schmidt, A., **Tollis, S.**, Tyers, M., Royer, C.A., Milias-Argeitis, A., and Heinemann, M. (2021) The timing of Start is determined primarily by increased synthesis of the Cln3 activator rather than dilution of the Whi5 inhibitor. *In revision, Molecular Biology of the Cell*
2. **Tollis, S.** †,*, Rizzotto, A.*, Pham, N., Koivukoski, S., Sivakumar, A., Wildenhain, J., Zuleger, N., Keys, J.T., Batrakou, D., Culley, J., Zheng, S., Lammerding, J., Carragher, N., Brunton, V. G., Latonen, L., Auer, M., Tyers, M., and Schirmer, E.C.† (2021) Unique Compounds Target Nuclear Size Changes in Distinct Cancer Types, Blocking Cell Migration. *In revision, ACS chemical biology. (*): equivalent contributions. (†): co-corresponding authors. BioRxiv (preliminary version) https://doi.org/10.1101/2020.01.10.902148*

Published/in press (for conference proceedings, only works not included in other published manuscripts are listed):

1. Ould Setti, M. and **Tollis, S.** (2022) In-Depth Correlation Analysis of SARS-CoV-2 Effective Reproduction Number with Mobility Patterns Identifies Three Groups of Countries. *In press, Journal of Preventive Medicine and Public Health.*
2. **Tollis, S.** †,*, Singh, J.*, Thattikota, Y., Palou, R., Ghazal, G., Coulombe-Huntington, J., Tang, X., Moore, S., Blake, D., Bonneil, E., Royer, C.A., Thibault, P., and Tyers, M.† (2021) Nsr1, a nitrogen source-regulated microprotein, confers an alternative mechanism of G1/S transcriptional activation in budding yeast. *In press, PLoS Biology. (*): equivalent contributions. (†):co-corresponding authors.*
   BioRxiv: https://doi.org/10.1101/2020.04.20.033787
3. Goswami, P., Dorsey, S., Coffin, C., Ghazal, G., Thattikota, Y., Cheng, J., **Tollis, S.†,** Tyers, M.†, and Royer, C.A.† (2021) A Novel G1/S Transcription Factor Feedback Loop in the Start Transition in Budding Yeast Revealed by sN&B. *Biophysical J **120** (3):* page 140a (peer-reviewed conference proceedings).

https://doi.org/10.1016/j.bpj.2020.11.1045

4. Black, L.*, **Tollis, S.***,†, Fu, G., Fiche, J.-B., Dorsey, S., Cheng, J., Ghazal, G., Notley, S., Crevier, B., Bigness, J., Nollmann, M., Tyers, M. †, and Royer, C.A. † (2020) G1/S transcription factors assemble in increasing numbers of discrete clusters through G1 phase. *J. Cell Biol.* **219** (9): e202003041. *(*):equivalent contributions.(†):co-corresponding authors.*
5. Jacques, S.*, van der Sloot, A.M.*, Huard, C.*, Coulombe-Huntington, J., Tsao, S., **Tollis, S.,** Bertomeu, T., Culp, E.J., Pallant, D., Cook, M., Bonneil, E., Thibault, P., Wright, G.D., and Tyers, M. (2020) Imipridones cause cellular toxicity in human cells and bacteria by ectopic activation of the ClpP protease. *Genetics* **214** (4): 1103-1120. *(*): equivalent contributions.*
6. Dorsey, S., Goswami, P., Cheng, J., Thattikota, Y., **Tollis, S.,** Royer, C.A., Tyers, M. (2019) Quantification of G1-Cyclin Dynamics in Yeast by Scanning Number and Brightness. *Biophysical J **116** (3):* page 532 (peer-reviewed conference proceedings).
7. Dorsey, S.*, **Tollis, S.***, Cheng, J., Black, L., Notley, S., Tyers, M., Royer, C.A. (2018) G1/S Transcription Factor Abundance Reveals Growth-Dependent Determinants of Cell Cycle Commitment in Yeast. *Cell Systems* **6**: 1-16. *(*): equivalent contributions.*
8. **Tollis, S.,** Dorsey, S., Tyers, M. and Royer, C.A. (2018) Absolute Quantification Reveals Growth and Nutrient-Dependent Control of G1/S Transcription Factor Abundance as a Determinant of Start. *Biophysical J.* **114** (3): p151a (peer-reviewed conference proceedings).
9. Black, L., Fiche, J-B., **Tollis, S.,** Cheng, J., Notley, S., Crevier, B., Tyers, M., Nollmann, M. and Royer, C.A. (2018) Super Resolution Imaging of Start Transcription Factors in Yeast. *Biophysical J.* **114** (3): p547a (peer-reviewed conference proceedings).
10. Thattikota, Y., **Tollis, S.**, Palou, R., Vinet, J., Tyers, M., and D'Amours, D. (2018) Cdc48/VCP promotes chromosome morphogenesis by releasing condensin from self-entrapment in chromatin. *Mol. Cell* **69***:* 1-13.
11. Laporte, D., Courtout, F., **Tollis, S.,** Sagot, I. (2016) Quiescent Saccharomyces cerevisiae forms telomere hyperclusters at the nuclear membrane vicinity through a multifaceted mechanism involving Esc1, the Sir complex, and chromatin condensation. *Mol. Biol. Cell* **27** (12): 1875-1884
12. **Tollis, S.** (2015) A Jump Distance-based Bayesian analysis method to unveil fine single molecule transport features. *http://arxiv.org/abs/1506.01112*
13. Jose, M., **Tollis, S.**, Nair, D., Mitteau, R., Velours, C., Massoni-Laporte, A., Sibarita, J.B., and McCusker, D. (2015) A quantitative imaging-based screen reveals the exocyst as a network hub connecting endo- and exocytosis. *Mol. Biol. Cell* **26** (13): 2519-2534
14. Jose, M.*, **Tollis, S.***, Nair, D., Sibarita, J.B., and McCusker, D. (2013) Robust polarity establishment occurs via an endocytosis-based cortical corralling mechanism. *J. Cell Biol.* **200(4),** 407-418. *(*): equivalent contributions.* Article *in Focus* in JCB, http://jcb.rupress.org/content/200/4/363/tab-pdf
15. Mitteau, R., Massoni-Laporte, A., Deepak, M. J., **Tollis, S.**, and McCusker, D. (2012). Mechanisms underlying the regulation of a Rho-family GTPase. *Mol. Biol. Cell* **23** (conference proceedings).
16. **Tollis, S.,** Gopaldass, N., Soldati, T., Endres, R.G. (2012) How one cell eats another: principles of phagocytosis. Chapter of the book "Systems microbiology: current topics and applications" by B. Robertson and B. Wren, Caister Academic Press 2012 (ISBN-13: 978-1-908230-02-7) https://www.caister.com/hsp/pdf/flyer/systemsmicrobiology.pdf
17. Dart, A.E., **Tollis, S.**, Bright, M.D., Frankel, G.M., and Endres, R.G. (2012) The motor protein Myosin 1G functions in FcγR-mediated phagocytosis. *J. Cell Sci.* **125**, 6020-6029
18. Aquino, G., Clausznitzer, D., **Tollis, S.,** Endres, R.G. (2011) Optimal receptor-cluster size determined by intrinsic and extrinsic noise. *Phys. Rev. E.* **83**: 021914
19. **Tollis, S.,** Dart, A.E., Tzircotis, G., Endres, R.G, (2010) The zipper mechanism in phagocytosis: energetic requirements and variability in phagocytic cup shape. *BMC Sys. Biol. **4:** 149*
20. Crouzy B., **Tollis, S.,** Ivanov, D.A. (2007) Josephson current in a superconductor-ferromagnet-

superconductor junction with in-plane ferromagnetic domains. *Phys. Rev. B* **76**: 134502

21. Buzdin, A., **Tollis, S**., Cayssol, J. (2007) Anomalous (H, T) phase diagram in bilayered superconducting systems. *Physica C*, **460**: 1028-1030
22. Crouzy, B., **Tollis, S.**, Ivanov, D.A. (2007) Josephson current in a superconductor-ferromagnet junction with two noncollinear magnetic domains. *Phys. Rev. B* **75**: 054503
23. **Tollis, S**., Cayssol, J., Buzdin, A. (2006) Competition between π-coupling and Fulde-Ferrell-Larkin-Ovchinnikov modulation in a periodic array of ferromagnetic-superconducting bilayers of atomic thickness. *Phys. Rev. B* **73**: 174519
24. Buzdin, A., **Tollis, S.**, Cayssol, J. (2005) Field-Induced superconductivity with an enhanced and tunable paramagnetic limit. *Phys. Rev. Lett.* **95**: 167003
25. **Tollis, S.**, Daumens, M., Buzdin, A. (2005) Inversion of the proximity effect in atomic-scale ferromagnet/superconductor/ferromagnet trilayers. *Phys. Rev. B* **71**: 024510
26. **Tollis, S.** (2004) First-order phase transitions in ferromagnetic/superconducting/ ferromagnetic trilayers. *Phys. Rev. B* **69**: 104532

Publications intended for the general public (science popularization articles, in French)

1. **Tollis, S.** (2014) Tous les chemins mènent au Pôle. *Tell me your science popularization blog,* https://tellmeyourscience.org/2014/01/06/tous-les-chemins-menent-au-pole/
2. **Tollis, S.** (2014) Je suis un excellent conducteur. *Tell me your science popularization blog,* https://tellmeyourscience.org/2014/01/21/je-suis-un-excellent-conducteur/
3. **Tollis, S.** (2014) Breaking news ! Un nouvel océan est en train de naître!. *Tell me your science popularization blog,* https://tellmeyourscience.org/2014/01/27/breaking-news-un-nouvel-ocean-est-en-train-de-naitre/
4. **Tollis, S.** (2014) La merveilleuse ingéniosité des bactéries. *Tell me your science popularization blog,* https://tellmeyourscience.org/2014/03/03/la-merveilleuse-ingeniosite-des-bacteries/
5. **Tollis, S.** (2013) 2nd Kerner Prize for scientific popularization. ARC foundation congress, Paris, France.
6. **Tollis, S.** (2007) Le théorème de Wick. *Article about the demonstration of Wick's statistical physics theorem on the online encyclopedia Wikipedia.* https://fr.wikipedia.org/wiki/Th%C3%A9or%C3%A8me_de_Wick

Public artistic and design activities

1. **Tollis, S.** (2014) Interview for the radio show « Que cherchent'ils? » on RCF radio (Bordeaux, France) in collaboration with Cap Sciences. https://www.youtube.com/watch?v=uwMFLZYlnT4
2. **Tollis, S.** (2014) Production of a short movie « Tous les Chemins mènent au Pôle » (all routes lead to the Pole), selected for the final of the contest « Filmer sa recherche », in the framework of the CNRS Researchers films' Festival, Nancy, France.

Theses

1. **Tollis, S.** (2005) Contributions to the theory of superconductor-ferromagnetic nanostructures. Ph.D. dissertation, University of Bordeaux 1. Supervisor: A. I. Buzdin.
2. **Tollis, S.** (2002) Modeling the violation of the CPT symmetry in neutrinos. Masters dissertation, University of Clermont-Ferrand Blaise Pascal. Supervisor: J. Orloff.