Publications - Sylvain Tollis - October 14th, 2022

Peer-reviewed scientific articles

In preparation:

- Jeskanen, H., Willman, R.-M., Kemppainen, S., Mäkinen, P., Saastamoinen, K., Kuulasmaa, T., Heikkinen, S., **Tollis, S**., Müller, S., Malm, T., Rauramaa, T., Lichtenthaler, S., Haapasalo, A., Martiskainen, H., Takalo, M., Leinonen, V., and Hiltunen, M. (expected submission winter 2023) Characterization of an Alzheimer's disease-associated risk variant in progranulin indicates hyperactivation of microglia around β-amyloid plaques. *In preparation.*
- Höglund, N., Nieminen, P., Mustonen, A.-M., **Tollis, S.,** Holopainen, M., Ruhanen, H., Käkelä, R., Mykkänen, A. (expected submission fall 2022) Fatty acid fingerprints in bronchoalveolar lavage fluid and its extracellular vesicles reflect equine asthma severity. *In preparation.*
- **Tollis, S.**†, Palou, R., Munawar, M., Thattikota, Y., and Tyers, M. (expected submission winter 2023) Glucose availability modulates cell size through Msn2/4-dependent control of Swi6 expression in budding yeast. *In preparation for Cell Systems. (†): corresponding author.*
- Lyst, M., Zhang, L., Alexander-Howden, B., **Tollis, S.**, St-Cyr, D., van der Sloot, A.M., Tyers, M., and Bird, A. (expected submission winter 2023) 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 fall 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 2023) 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 winter 2023) 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 spring 2023) 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. Mustonen, A-M., **Tollis, S.,** Käkelä, R., Lehenkari, P., Sihvo, S. P., and Nieminen, P. (2022) Increased n-6 polyunsaturated fatty acids indicate inflammatory lipid modifications in synovial membranes with rheumatoid arthritis. Submitted to *Arthritis research & Therapy*.

Published/in press (for conference proceedings, only works not included in other publications are shown):

1. Schirmer, E.C., Latonen, L., and **Tollis, S.** (2022) Nuclear Size Rectification: A Potential New Therapeutic Approach to Reduce Metastasis in Cancer. *Front. Cell Dev. Biol.* **10**:1022723.
2. **Tollis, S.** (2022) The G1/S repressor WHI5 is expressed at similar levels throughout the cell cycle. *BMC Res. Notes* **15**, 248.
3. Aaltonen, N., Kyykallio, H., **Tollis, S.,** Capra, J., Hartikainen, J., Matilainen, J., Oikari, S., Heldin, P. and Rilla, K. (2022) MCF10CA breast cancer cells utilize hyaluronan-coated EV-rich trails for coordinated migration. *Front. Oncol.* **12**:869417. doi: 10.3389/fonc.2022.869417
4. 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.† (2022) The timing of Start is determined primarily by increased synthesis of the Cln3 activator rather than dilution of the Whi5 inhibitor. *Mol. Biol. Cell* **33**(5):rp2. doi: 10.1091/mbc.E21-07-0349. *(†):co-*

corresponding authors

5. 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. *J. Prev. Med. Public Health* **55**(2): 134-143. *(*): equivalent contributions.*
6. **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.† (2022) The microprotein Nrs1 rewires the G1/S transcriptional machinery during nitrogen limitation in budding yeast. *PLoS Biol* **20**(3): e3001548. *(*): equivalent contributions. (†):co-corresponding authors; https://doi.org/10.1371/journal.pbio.3001548*
7. **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.† (2022) Chemical interrogation of nuclear size identifies compounds with cancer cell line-specific effects on migration and invasion. *ACS Chem. Biol.* **17**(3), 680–700. *(*): equivalent contributions. (†): co-corresponding authors.*
8. **Tollis, S.**, Goswami, P., Palou, R., Coffin, C., Thattikota, Y., Tyers, M. and Royer, C.A. (2022) Growth- and nutrient-dependent G1/S transcription factor upregulation is controlled at the transcriptional level and is critical for proliferation in poor nutrient conditions. *Biophysical Journal* **121** (3): Pages 404a-405a (peer-reviewed conference proceedings) *https://doi.org/10.1016/j.bpj.2021.11.745*
9. 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.*
10. 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.*
11. 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).
12. 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.*
13. **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).
14. 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).
15. 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.
16. 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
17. **Tollis, S.** (2015) A Jump Distance-based Bayesian analysis method to unveil fine single molecule transport features. *http://arxiv.org/abs/1506.01112*
18. 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
19. 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

20. 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).
21. **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
22. 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
23. 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
24. **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*
25. 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
26. Buzdin, A., **Tollis, S**., Cayssol, J. (2007) Anomalous (H, T) phase diagram in bilayered superconducting systems. *Physica C*, **460**: 1028-1030
27. 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
28. **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
29. Buzdin, A., **Tollis, S.**, Cayssol, J. (2005) Field-Induced superconductivity with an enhanced and tunable paramagnetic limit. *Phys. Rev. Lett.* **95**: 167003
30. **Tollis, S.**, Daumens, M., Buzdin, A. (2005) Inversion of the proximity effect in atomic-scale ferromagnet/superconductor/ferromagnet trilayers. *Phys. Rev. B* **71**: 024510
31. **Tollis, S.** (2004) First-order phase transitions in ferromagnetic/superconducting/ ferromagnetic trilayers. *Phys. Rev. B* **69**: 104532