

Carl-Mikael Suomivuori

Basic Life Research Scientist

Computer Science

Bio

ACADEMIC APPOINTMENTS

- Basic Life Science Research Associate, Computer Science

Publications

PUBLICATIONS

- **How GPCR Phosphorylation Patterns Orchestrate Arrestin-Mediated Signaling.** *Cell*
Latorraca, N. R., Masureel, M., Hollingsworth, S. A., Heydenreich, F. M., Suomivuori, C., Brinton, C., Townshend, R. J., Bouvier, M., Kobilka, B. K., Dror, R. O.
2020
- **Angiotensin and biased analogs induce structurally distinct active conformations within a GPCR.** *Science (New York, N.Y.)*
Wingler, L. M., Skiba, M. A., McMahon, C., Staus, D. P., Kleinhenz, A. L., Suomivuori, C., Latorraca, N. R., Dror, R. O., Lefkowitz, R. J., Kruse, A. C.
2020; 367 (6480): 888–92
- **Molecular mechanism of biased signaling in a prototypical G protein-coupled receptor.** *Science (New York, N.Y.)*
Suomivuori, C., Latorraca, N. R., Wingler, L. M., Eismann, S., King, M. C., Kleinhenz, A. L., Skiba, M. A., Staus, D. P., Kruse, A. C., Lefkowitz, R. J., Dror, R. O.
2020; 367 (6480): 881–87
- **Conformational transitions of a neurotensin receptor1-Gi1complex.** *Nature*
Kato, H. E., Zhang, Y., Hu, H., Suomivuori, C., Kadji, F. M., Aoki, J., Krishna Kumar, K., Fonseca, R., Hilger, D., Huang, W., Latorraca, N. R., Inoue, A., Dror, et al
2019
- **Energetics and dynamics of a light-driven sodium-pumping rhodopsin** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Suomivuori, C., Gamiz-Hernandez, A. P., Sundholm, D., Kaila, V. I.
2017; 114 (27): 7043–48
- **A positively tuned voltage indicator for extended electrical recordings in the brain.** *Nature methods*
Evans, S. W., Shi, D., Chavarha, M., Plitt, M. H., Taxidis, J., Madruga, B., Fan, J. L., Hwang, F., van Keulen, S. C., Suomivuori, C., Pang, M. M., Su, S., Lee, et al
2023; 20 (7): 1104-1113
- **GPR161 structure uncovers the redundant role of sterol-regulated ciliary cAMP signaling in the Hedgehog pathway.** *bioRxiv : the preprint server for biology*
Hoppe, N., Harrison, S., Hwang, S. H., Chen, Z., Karelina, M., Deshpande, I., Suomivuori, C. M., Palicharla, V. R., Berry, S. P., Tschaikner, P., Regele, D., Covey, D. F., Stefan, et al
2023
- **Structural basis for activation of CB1 by an endocannabinoid analog.** *Nature communications*
Krishna Kumar, K., Robertson, M. J., Thadhani, E., Wang, H., Suomivuori, C. M., Powers, A. S., Ji, L., Nikas, S. P., Dror, R. O., Inoue, A., Makriyannis, A., Skinotis, G., Kobilka, et al
2023; 14 (1): 2672
- **Insights into distinct signaling profiles of the OR activated by diverse agonists.** *Nature chemical biology*

- Qu, Q., Huang, W., Aydin, D., Paggi, J. M., Seven, A. B., Wang, H., Chakraborty, S., Che, T., DiBerto, J. F., Robertson, M. J., Inoue, A., Suomivuori, C., Roth, et al
2022
- **Signaling snapshots of a serotonin receptor activated by the prototypical psychedelic LSD.** *Neuron*
Cao, C., Barros-Alvarez, X., Zhang, S., Kim, K., Damgen, M. A., Panova, O., Suomivuori, C., Fay, J. F., Zhong, X., Krumm, B. E., Gumpfer, R. H., Seven, A. B., Robertson, et al
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 - **Autoantibody mimicry of hormone action at the thyrotropin receptor.** *Nature*
Faust, B., Billesbølle, C. B., Suomivuori, C. M., Singh, I., Zhang, K., Hoppe, N., Pinto, A. F., Diedrich, J. K., Muftuoglu, Y., Szkudlinski, M. W., Saghatelian, A., Dror, R. O., Cheng, et al
2022
 - **Cryo-EM, Protein Engineering, and Simulation Enable the Development of Peptide Therapeutics against Acute Myeloid Leukemia.** *ACS central science*
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 - **Atypical structural snapshots of human cytomegalovirus GPCR interactions with host G proteins.** *Science advances*
Tsutsumi, N., Maeda, S., Qu, Q., Vogele, M., Jude, K. M., Suomivuori, C., Panova, O., Waghay, D., Kato, H. E., Velasco, A., Dror, R. O., Skiniotis, G., Kobilka, et al
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 - **Selective G protein signaling driven by substance P-neurokinin receptor dynamics.** *Nature chemical biology*
Harris, J. A., Faust, B., Gondin, A. B., Damgen, M. A., Suomivuori, C., Veldhuis, N. A., Cheng, Y., Dror, R. O., Thal, D. M., Manglik, A.
2021
 - **Molecular Mechanism of Biased Signaling in a Prototypical G-proteincoupled Receptor**
Suomivuori, C., Latorraca, N. R., Wingler, L. M., Eismann, S., King, M. C., Kleinhenz, A. W., Skiba, M. A., Staus, D. P., Kruse, A. C., Lefkowitz, R. J., Dror, R. O.
CELL PRESS.2020: 162A
 - **Absorption shifts of diastereotopically ligated chlorophyll dimers of photosystem I** *PHYSICAL CHEMISTRY CHEMICAL PHYSICS*
Suomivuori, C., Fliegl, H., Starikov, E. B., Balaban, T., Kaila, V. I., Sundholm, D.
2019; 21 (13): 6851-58
 - **Tuning the Protein-Induced Absorption Shifts of Retinal in Engineered Rhodopsin Mimics** *CHEMISTRY-A EUROPEAN JOURNAL*
Suomivuori, C., Lang, L., Sundholm, D., Gamiz-Hernandez, A. P., Kaila, V. I.
2016; 22 (24): 8254-61
 - **Exploring the Light-Capturing Properties of Photosynthetic Chlorophyll Clusters Using Large-Scale Correlated Calculations** *JOURNAL OF CHEMICAL THEORY AND COMPUTATION*
Suomivuori, C., Winter, N. C., Haettig, C., Sundholm, D., Kaila, V. I.
2016; 12 (6): 2644-51
 - **Coupled-Cluster Studies of Extensive Green Fluorescent Protein Models Using the Reduced Virtual Space Approach** *JOURNAL OF PHYSICAL CHEMISTRY B*
Send, R., Suomivuori, C., Kaila, V. I., Sundholm, D.
2015; 119 (7): 2933-45
 - **The role of solvent exclusion in the interaction between D124 and the metal site in SOD1: implications for ALS** *JOURNAL OF BIOLOGICAL INORGANIC CHEMISTRY*
Mera-Adasme, R., Suomivuori, C., Fierro, A., Pesonen, J., Sundholm, D.
2013; 18 (8): 931-38