

Baptiste GENOT PhD.

Current email : bgenot@edu.k.u-tokyo.ac.jp

Other contact : baptiste.genot@gmail.com

Research interests

Plant and algae biology, photo-symbiosis. Cells responses to biotic and abiotic environmental challenges, in particular stress signaling processes at the cellular and molecular level. Biochemistry, molecular biology and microscopy approaches.

Education

- Ph.D in Cellular Biology, Université Paris-Saclay, France, 2016.
(<https://theses.fr/2016SACLE010>)
 - M.S. Plant Production and Agri-Food Industries (PVIA), University Picardy Jules Verne, Amiens France, 2012.
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Work experience

2024- present: Project researcher

Graduate School of Frontier Sciences, the University of Tokyo, Maruyama lab.

Areas of research: Evolution of photosynthesis, photosymbiosis, coral reef biology.

2020-2024: Post-doctoral scientist

Bigelow Laboratory for Ocean Sciences, East Boothbay, USA. J. Burns laboratory.

Areas of research: Salamander/algae symbiosis, Algae stress signaling, Ocean sciences.

2016-2018: Post-doctoral scientist

Institut Jacques Monod, Paris, France. I. Jupin laboratory (closed).

Areas of research: phytovirus replication, plant stress signaling.

2012-2016: PhD student

The Institute of Plant Sciences of Paris-Saclay (IPS2), Paris, France. Stress Signaling lab, Dr. Jean Colcombet.

PhD research: Functional characterization of the stress-activated Arabidopsis MAP Kinase MPK3 using gain-of-function mutations.

Publications

Protist biology and photosymbiosis

Genot, B., Grogan, M., Yost, M., Iacono, G., Archer, S.D., Burns, J.A., 2024. Functional stress responses in Glaucophyta: Evidence of ethylene and abscisic acid functions in *Cyanophora paradoxa*. *Journal of Eukaryotic Microbiology* n/a, e13041. <https://doi.org/10.1111/jeu.13041>

Genot, B., Burns, J.A., 2022. Transformation of the symbiotic alga *Oophila amblystomatis*: a new tool for animal-algae symbiosis studies. *Symbiosis* 87, 143–151. <https://doi.org/10.1007/s13199-022-00861-0>

Yang, H., **Genot, B.**, Duhamel, S., Kerney, R., Burns, J.A., 2022. Organismal and cellular interactions in vertebrate–alga symbioses. *Biochemical Society Transactions* 50, 609–620. <https://doi.org/10.1042/BST20210153>

Ocean sciences

Burns, J.A., Becker, K.P., Casagrande, D., Daniels, J., Roberts, P., Orenstein, E., Vogt, D.M., Teoh, Z.E., Wood, R., Yin, A.H., **Genot, B.**, Gruber, D.F., Katija, K., Wood, R.J., Phillips, B.T., 2024a. An in situ digital synthesis strategy for the discovery and description of ocean life. *Sci Adv* 10, eadj4960. <https://doi.org/10.1126/sciadv.adj4960>

Burns, J.A., Daniels, J., Becker, K.P., Casagrande, D., Roberts, P., Orenstein, E., Vogt, D.M., Teoh, Z.E., Wood, R., Yin, A.H., **Genot, B.**, Wood, R.J., Katija, K., Phillips, B.T., Gruber, D.F., 2024b. Transcriptome sequencing of seven deep marine invertebrates. *Sci Data* 11, 679. <https://doi.org/10.1038/s41597-024-03533-4>

Plant Biology

Genot, B., Lang, J., Berriri, S., Garmier, M., Gilard, F., Pateyron, S., Haustraete, K., Van Der Straeten, D., Hirt, H., Colcombet, J., 2017. Constitutively Active Arabidopsis MAP Kinase 3

Triggers Defense Responses Involving Salicylic Acid and SUMM2 Resistance Protein. *Plant Physiology* 174, 1238–1249. <https://doi.org/10.1104/pp.17.00378>

Lang, J., **Genot, B.**, Bigeard, J., Colcombet, J., 2022. MPK3 and MPK6 control salicylic acid signaling by up-regulating NLR receptors during pattern- and effector-triggered immunity. *Journal of Experimental Botany* 73, 2190–2205. <https://doi.org/10.1093/jxb/erab544>

Lang, J., **Genot, B.**, Hirt, H., Colcombet, J., 2017. Constitutive activity of the Arabidopsis MAP Kinase 3 confers resistance to *Pseudomonas syringae* and drives robust immune responses. *Plant Signaling & Behavior* 12, e1356533. <https://doi.org/10.1080/15592324.2017.1356533>

Latrasse, D., Jégu, T., Li, H., de Zelicourt, A., Raynaud, C., Legras, S., Gust, A., Samajova, O., Veluchamy, A., Rayapuram, N., Ramirez-Prado, J.S., Kulikova, O., Colcombet, J., Bigeard, J., **Genot, B.**, Bisseling, T., Benhamed, M., Hirt, H., 2017. MAPK-triggered chromatin reprogramming by histone deacetylase in plant innate immunity. *Genome Biology* 18, 131. <https://doi.org/10.1186/s13059-017-1261-8>

Talks

- International Society for Evolutionary Protistology (ISEP23) – virtual meeting, January 2023 – oral presentation “Exploring how single cells process information: Hormone activity in a glaucophyte alga”.
- 10th Congress of the International Symbiosis Society – Lyon, France, July 2022 – oral presentation and “teaching symbiosis” workshop on salamander/algae symbiosis.

Teaching

- Lab instructor, Sea change semester (2021 and 2022), Bigelow laboratory & Colby College : preparation of lecture material, demonstration of experiments, and grading lab reports.
- Mentored 4 REU students at Bigelow laboratory (2021-2022): experimental advice, planning and interpretation of results, poster and talk preparation, and moral support.
- Mentored 2 post-graduate students (2016-2018) at the Institut Jacques Monod, Paris, France.

- Mentored an undergraduate student (2015) at the Institute of Plant Sciences of Paris-Saclay (IPS2), Paris, France
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Grants

- Internal Bigelow laboratory “seed 2023” grant (30,000 USD) - Identification of hormone signaling pathway in Dinoflagellates: can we link hormone production to the species lifestyle ?
- PhD fellowship received by École doctorale Structure et Dynamique des Systèmes Vivants (ED577) - Université Paris-Saclay - National Institute of Research in Agriculture and Environment (INRAE).