

## MURIEL GUGGER

### *Statement of interest/love of phycology:*

In 1997, I fell in admiration of the morphological diversity of freshwater cyanobacteria, then I discovered the cyanotoxins and other bioactive compounds, particularly in the complexity of the cyanobacterial genomes.

These bacteria and their ability to colonize the Earth will fascinate me throughout my scientific career.

### *Top five phycological publications:*

1. Improving the coverage of the cyanobacterial phylum using diversity-driven genome sequencing. Shih PM, Wu D, Latifi A, Axen SD, Fewer DP, Talla E, Calteau A, Cai F, Tandeau de Marsac N, Rippka R, Herdman M, Sivonen K, Coursin T, Laurent T, Goodwin L, Nolan M, Davenport KW, Han CS, Rubin EM, Eisen JA, Woyke T, **Gugger M**, Kerfeld CA. Proc Natl Acad Sci U S A. 2013 Jan 15;110(3):1053-8. doi: 10.1073/pnas.1217107110. Epub 2012 Dec 31. PMID: 23277585
2. First report in a river in France of the benthic cyanobacterium *Phormidium favosum* producing anatoxin-a associated with dog neurotoxicosis. **Gugger M**, Lenoir S, Berger C, Ledreux A, Druart JC, Humbert JF, Guette C, Bernard C. Toxicon. 2005 Jun 1;45(7):919-28. doi: 10.1016/j.toxicon.2005.02.031. Epub 2005 Apr 13. PMID: 15904687
3. Genomes of Stigonematalean cyanobacteria (subsection V) and the evolution of oxygenic photosynthesis from prokaryotes to plastids. Dagan T, Roettger M, Stucken K, Landan G, Koch R, Major P, Gould SB, Goremykin VV, Rippka R, Tandeau de Marsac N, **Gugger M**, Lockhart PJ, Allen JF, Brune I, Maus I, Pühler A, Martin WF. Genome Biol Evol. 2013;5(1):31-44. doi: 10.1093/gbe/evs117. PMID: 23221676
4. Intracellular Ca-carbonate biomineralization is widespread in cyanobacteria. Benzerara K, Skouri-Panet F, Li J, Féraud C, **Gugger M**, Laurent T, Couradeau E, Ragon M, Cosmidis J, Menguy N, Margaret-Oliver I, Tavera R, López-García P, Moreira D. Proc Natl Acad Sci U S A. 2014 Jul 29;111(30):10933-8. doi: 10.1073/pnas.1403510111. Epub 2014 Jul 9. PMID: 25009182
5. Phylum-wide comparative genomics unravel the diversity of secondary metabolism in Cyanobacteria. Calteau A, Fewer DP, Latifi A, Coursin T, Laurent T, Jokela J, Kerfeld CA, Sivonen K, Piel J, **Gugger M**. BMC Genomics. 2014 Nov 18;15(1):977. doi: 10.1186/1471-2164-15-977. PMID: 25404466

### *Academic history:*

Muriel Gugger obtained her Ph.D. in 2001 from the University Paris VII, based on her studies on toxic planktonic cyanobacteria, under the Co-direction of Pr. Kaarina SIVONEN from Helsinki University where she worked 2 years and 4 months, and of Pr Alain COUTE from MNHN Paris.

She joined the lab of Pr. Lucien HOFFMANN at CRP-GL in Luxembourg for 2 years and half post-doctoral fellowship on the European Project MIDICHIP, followed by another 2 years and half post-doctoral fellowship in Pr. Cécile BERNARD lab at MNHN, Paris. During these two positions, she investigated the diversity and evolution of the branching cyanobacteria, as well as the bloom forming species and their cyanotoxins, notably on neurotoxin dog poisonings. After a short period working as Project Manager on wastewater management, Muriel joined the lab of Dr. Nicole TANDEAU DE MARSAC at the Institut Pasteur in August 2007 as Adjunct Curator of the PCC to work with Rosi RIPPKA. This led to her current position as Head of the Collection of Cyanobacteria in July 2009. Her main interests are the evolution of the cyanobacterial phylum, and the diversity of the genes involved in the synthesis of cyanotoxins and natural products in Cyanobacteria.