Marine biological resources

CINNAMON

ANALYSING HOW A KEY MARINE PHYTOPLANKTON ORGANISM ADAPTS TO IRON DEFICIENCY IN A CONTEXT OF GLOBAL CHANGE

The CINNAMON project will analyse how one of the most abundant photosynthetic organisms in the marine environment – *Synechococcus* cyanobacterium – adapts to iron deficiency in a context of global change.

The project will use a multi-scale (gene to global ocean), comparative approach to study the response of the *Synechococcus* model to two environmental factors – availability of iron and temperature – by focusing on 3 principle areas:

- Physiological studies of the effects of iron deficiency and/or temperature on strains that are representative of environments whether these are limited in iron or not.
- Genomic and transcriptomic comparison to decipher the genetic basis of adaptability to changes in temperature and availability of iron and the role of metabolism and regulation in the capacity of the tested strains to adapt.
- Meta-omic analyses to identify the genes potentially involved in the acclimatisation (physiology) and adaptation (evolution) of natural populations of *Synechococcus* to iron deficiency and temperature variations.

Partners

Research centers

Laboratoire AD2M (UMR7144), Station biologique de Roscoff [Project Developer]
Laboratoire d'Océanographie Microbienne (LOMIC, UMR 7621), Banyuls
Laboratoire des Sciences du Numérique de Nantes (LS2N, UMR 6004), Nantes
Station biologique de Roscoff, Plateforme ABIMS (Analysis Bioinformatics for Marine Science, FR2424), Roscoff

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