



ARCHAEAL DNA REPAIR

UNCOVERING THE SECRETS OF A MARINE MIROORGANISM EXPERT AT DNA REPAIR

Archaeal hyperthermophiles are marine microorganisms capable of living and replicating in environments rich in heavy metals, offering neither light nor oxygen and reaching temperatures exceeding 80°. For biologists and geneticists, these microorganisms provide an excellent model for studying the mechanics of DNA repair as their DNA sustains serious damage in the extreme conditions imposed by their environment. Whilst these microorganisms have been around for almost a billion years, they have been of interest to scientists since the end of the 1970s when their habitat around hydrothermal springs began to be explored.

Today these microorganisms open up huge potential for fundamental genetics research as well as the possibility of perfecting new biotechnological applications. One of these archaeons, *Pyrococcus abyssi*, is at the heart of the ARCHAEAL DNA REPAIR project. A prokaryote microorganism with no membrane-bonded nucleus, it is no larger than a micrometer. *Pyrococcus abyssi* shares a certain number of characteristics with eukaryotes and bacteria whose comparative study will enable advances in understanding the origins of DNA and the proteins involved in DNA replication and repair. Recognised by the Pôle Mer Bretagne, ARCHAEAL DNA REPAIR has secured funding from the Agence Nationale de la Recherche (French National Research Agency).

Partners

Research centers

Institut de Génétique et Microbiologie,
Université de Paris XI, CNRS, Orsay [\[Project Developer\]](#)
Ifremer, Laboratoire de Microbiologie des
Environnements Extrêmes, Brest
Station Biologique de Roscoff, Laboratoire
Végétaux Marins et Biomolécules, Roscoff

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