



HAL
open science

Viruses of hyperthermophilic archaea isolated from deep-sea hydrothermal vents.

Sarah Thiroux, Nadège Bienvenu, Samuel Dupont, Anne Godfroy, Claire Geslin

► To cite this version:

Sarah Thiroux, Nadège Bienvenu, Samuel Dupont, Anne Godfroy, Claire Geslin. Viruses of hyperthermophilic archaea isolated from deep-sea hydrothermal vents.. GDR Archaea 2018, Oct 2018, Brest, France. ⟨hal-04812508⟩

HAL Id: hal-04812508

<https://hal.science/hal-04812508v1>

Submitted on 11 Dec 2024

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



HAL Authorization

Viruses of hyperthermophilic archaea isolated from deep-sea hydrothermal vents

Sarah Thiroux * ¹, Nadège Bienvenu[†] ², Samuel Dupont ², Anne Godfroy[‡]
³, Claire Geslin[§] ²

¹ Laboratoire de microbiologie des environnements extrêmes (LMEE) – Institut Universitaire Européen de la Mer (IUEM) – Rue Dumont d’Urville, 29280 Plouzané,

² Laboratoire de microbiologie des environnements extrêmophiles (LM2E) – Institut Français de Recherche pour l’Exploitation de la Mer (IFREMER), CNRS : UMR6197, Université de Bretagne Occidentale (UBO), Institut Universitaire Européen de la Mer (IUEM) – Centre de Brest DRV/VP - BP 70 29280 PLOUZANE,

³ Laboratoire de Microbiologie des Environnements Extrêmes [Plouzané] (LM2E) – CNRS : UMR6197, Institut Français de Recherche pour l’Exploitation de la Mer (IFREMER), Université de Bretagne Occidentale (UBO) – Technopôle Pointe du Diable, 29280 Plouzané,

Viruses of hyperthermophilic archaea isolated from deep-sea hydrothermal vents

S. Thiroux, N. Bienvenu, S. Dupont, A. Godfroy and C. Geslin.

Laboratoire de Microbiologie des Environnements Extrêmes, UMR6197, UBO-IUEM, Ifremer, CNRS, Plouzané, France.

Viruses have a potential to be powerful agents that drive evolution and adaptation of their cellular hosts in the extreme marine environments. Nevertheless, our knowledge of the viral diversity associated to microorganisms inhabiting the deep sea hydrothermal vents is still limited. Only 10 viruses, 2 archaeovirus and 8 bacteriovirus, were isolated and characterized from this extreme environment *. Two lemon-shaped viruses, PAV1 and TPV1, associated to hyperthermophilic anaerobic *Archaea*, *Thermococcales* order, have been characterized in our laboratory. In order to deepen our knowledge on the viral diversity of marine hydrothermal microorganisms, we have extended our investigation to the order *Methanococcales*.

A screening carried on hyperthermophilic methanogens, has led to the discovery of the first archaeovirus isolated from the *Methanocaldococcus* genus. It is the first head/tail virus (a siphovirus-like) isolated from a hyperthermophilic archaea.

Comparative studies of these mobile genetic elements from hyper/thermophilic Archaea and Bacteria will help us understand the dynamics of the microbial communities in the deep marine biosphere.

*Speaker

†Corresponding author:

‡Corresponding author: anne.godfroy@ifremer.fr

§Corresponding author: claire.geslin@univ-brest.fr