

At the limits of life, hyper-saline aquatic ecosystems; Chott and Sebkha are a model of choice of extreme environments, housing a halophilic microflora that had to adapt to these conditions. In Algeria, these ecosystems are poorly studied. However, our study was carried out on the waters of Chott Tinsilt and Sebkha El Malah. The study of this microflora revealed the presence of a significant morphological, physiological and metabolic diversity. The molecular study allowed us to access to a phylogenetic affiliation including an Archean Species (ATS1) and 7 bacterial species (A1, A2, A3, A4, B1, B4, B5). The results showed that these isolates were related to the genera *Haloferax* (for the strain ATS1) and *Halomonas* (strains A1, A2 and A4), *Staphylococcus* (strain A3), *Salinivibrio* (strain B1), *Planococcus* (strain B4) and *Halobacillus* (strain B5). Most isolates produced hydrolases at high salt concentrations. The Production yields obtained are very promising for applications in the biotechnology and industrial microbiology.