

Tiny might be good: Exploring the potential for the genomic approach to infer induced effects on ancient saltworks.

Flavio De Angelis - *Centre of Molecular Anthropology for Ancient DNA Studies; Dept. Biology; Univ. of Rome Tor Vergata.*

Olga Rickards - *Centre of Molecular Anthropology for Ancient DNA Studies; Dept. Biology; Univ. of Rome Tor Vergata.*

The progress of the molecular analyses makes the sediments an adjunct natural archive to infer biotic and abiotic changes. Organisms interact with the environment, and their remains could provide a snapshot into a long-term perspective of the ecological change. Even though heavily dependent on deposition and preservation conditions, the DNA from multiple organisms is progressively going to be discovered and sequenced to deepen our knowledge about the characteristics of the communities and their environmental interactions. The current DNA sequencing techniques and computational approaches would improve our ability to dissect the environmental and ancient DNA entrapped in the sediments, both as adsorbed to particles or inside residual cells/resting stages.

The saltworks environment could represent an effectively sterile environment excellent for preserving biomolecules, making it a valuable benchmark for testing the genomic approach's ability to dissect the organismal/microbial communities living in the hypoxic/anoxic sediments characterizing ancient saltworks.

So far, we would extract DNA from the surface to the deeper sediment in a clean facility following dedicated protocols to minimize the contamination. We will use the cutting-edge protocols for ultra-low concentrated DNA extraction to maximize the recovery of ancient and modern DNA entrapped in the sediments. The Whole Genome Sequencing approach will allow us to identify the meta-community, whose DNA will be screened for enzymatic and abiotic detrimental damage patterns as markers of ancient DNA. Therefore, identifying variance organismal communities across sampling pods and following a differential salinity could be pivotal in contributing to the identification of the human management of the area.