

## ***Line 1 – Plants biodiversity, Evolution and systematics***

### **CHARACTERIZATION OF THE MICROBIOTA OF THE EUGANEAN THERMAL DISTRICT MUDS**

**People involved:** Nicoletta La Rocca, Barbara Gris  
nicoletta.larocca@unipd.it

#### **Project description**

The Euganean Thermal District is the oldest and largest thermal center in Europe and represents a reference in mud-based thermal treatments. The mature mud used for therapies is obtained following a traditional method described by a registered trademark. Mud maturation occurs in artificial tanks at the different SPAs where virgin clay, collected from the Costa D'Arquà Lake, is constantly irrigated with thermal water for at least 2 months to allow the formation over the mud surface of a green biofilm, mainly consisting of cyanobacteria. Previous studies showed that the microbial derived component of Euganean thermal mud has a major role in therapeutic activity especially thanks to the anti-inflammatory compounds released by cyanobacteria. This process and material has been protected by a patent in 2013 (EP1571203). The Centro Studi Termali Pietro D'abano recently financed a research project (including a PhD position) based at the Department of Biology with the following main objectives:

- i) the characterization by Next Generation Sequencing techniques of the microbiota during the mud maturation process
- ii) the evaluation of the biodiversity of mature muds of different SPAs
- iii) the identification of new species typical of the Euganean Thermal District and the evaluation of their high value compound production potentially contributing to the mud anti-inflammatory therapeutic properties.

This study are carried out by one PhD student and by two master students in Evolutionary Biology.

