A comprehensive database of Algal biological data

A. Idà [a] , L. Vigliano[b]

Dipartimento di Biologia, Laboratorio di Biologia delle alghe [a], Dipartimento di Matematica [b] Università degli Studi di Roma Tor Vergata

In recent years, microalgae have garnered interest for producing valuable molecules with high commercial importance, such as carotenoids, polysaccharides, fatty acids, steroids and algal toxins. They represent an exceptionally diverse group adapted to various ecological habitats such as subaerial, freshwater, marine and hyper-saline with a range of temperature and pH condition. The ability of microalgae to survive or proliferate over a wide range of environmental conditions is, to a large extent, reflected in the tremendous biodiversity. With over 50 000 species already identified and with many more yet to be identified.

With this huge biodiversity the research put some effort in order to increase the knowledge in algae system, for their capacity to fine-tune the metabolism efficiently in response to the changes in environmental conditions. Along with this effort there is an imperative need to integrate large scale data sets from high throughput experimental techniques using computational methods and database resources in order to provide comprehensive information about the molecular data. Only few databases are present so far, but no single database provides the necessary information on the characterized algal strains

To achieve this goal, we developed a custom-design database, Microalgae Database (MIDA) that may become an important tool in assisting scientists. The data are being collected from scientific experiments, published literature, high throughput experiment technology and computational analyses. In particular, a great relevance was given on lipids although MIDA embeds different bio-product information and it has a dedicated section for genetic information.