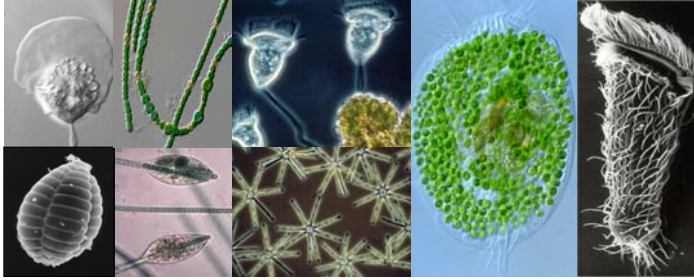
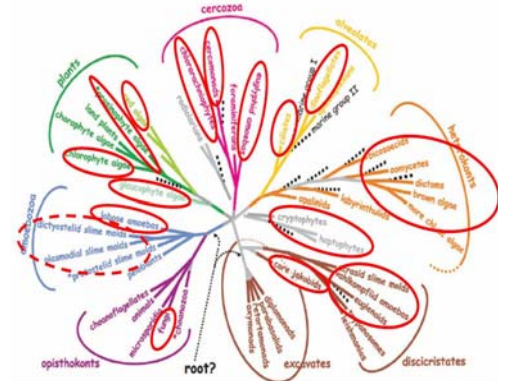


CCAP a National Capability underpinning the sequencing and biofuels revolutions

Day JG, Gachon CMM, Campbell CN, Küpper FC & Stanley MS

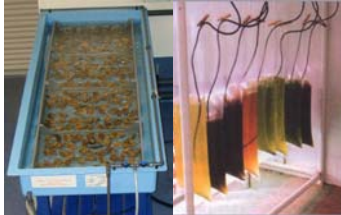


The Culture Collection of Algae and Protozoa (CCAP), located in SAMS European Centre for Marine Biotechnology (ECMB) provides a National Capability funded under Oceans 2025. It holds a uniquely diverse collection of micro-organisms (Protists, including both algae & protozoa, as well as prokaryotic cyanobacteria). The CCAP holds >3,000 different strains including >250 authentic strains (The taxonomic "gold-standard" culture derived from the originally described isolate). These organisms originate from a diverse range of ecological niches: polar - tropical; terrestrial - aquatic; freshwater - hypersaline.

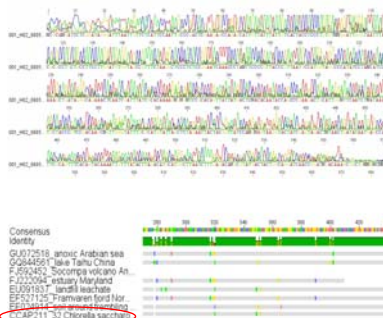


CCAP servicing and participating in scientific developments

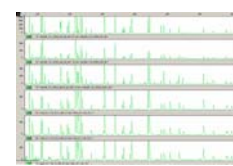
The collection acts as a service Biological Resource Centre (BRC), providing cultures and their associated data (culturing, genotypic, bioinformatic etc.) to the scientific community. Since 2005 CCAP has serviced >2800 orders, providing >6500 cultures. These cultures are used extensively for teaching, research (blue skies & applied), as well as in commercial activities including: ecotoxicity testing, biocide testing and aquaculture. During this period CCAP cultures have formed the basis of at least 500 publications, including those in 120 ISI listed journals.



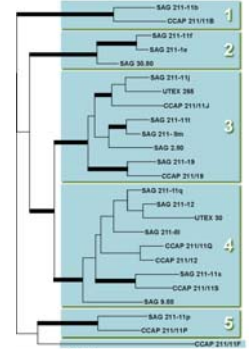
The CCAP knowledge-base www.ccap.ac.uk links access to biological materials with images, taxonomic, biogeographic, curatorial, bibliographic and molecular data.



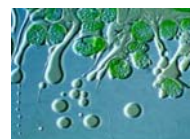
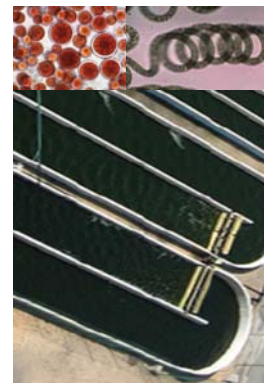
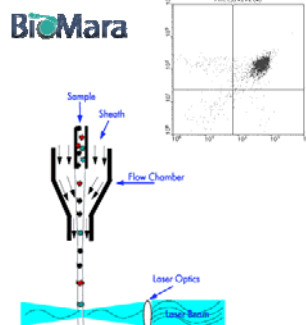
The sequencing and genomic revolutions are rapidly changing our capacity to understand and exploit biodiversity. The CCAP, in association with collaborators, is in the process of barcoding its holdings. These, with other genomic data, and their linkage with live specimens will be pivotal to future research developments in biodiversity, earth systems science and sustainable use of natural resources.



Barcoding using molecular markers including: SSU, LSU, ITS, Cox etc. and whole genome approaches can be employed to elucidate relationships at the strain, species, genus and higher taxonomic levels.



CCAP underpins the identification of unknown micro-organisms in the most diverse environments, based on the comparison of their DNA sequences.



The biodiversity and culturing experience of CCAP have been crucial to the recent developments in algal biofuels. The collection has been providing materials, advice and services to the emerging algal biofuels sector in the UK and world-wide. In addition to acting as a Patent Depository, under the Budapest Treaty. Furthermore, CCAP is actively involved in two major projects at SAMS: Biomara and the Carbon Trust, Algal Biofuel Challenge (ABC), funded Control of Grazers project.