

NANTES CULTURE COLLECTION: MICROPHYTOBENTHOS BIODIVERSITY FOR RESEARCH AND DEVELOPMENT ADVANCES

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Estuaries and coastal areas are amongst the most productive marine ecosystems on Earth. They are particularly valuable as habitats and feeding grounds for many organisms (birds, shellfish, demersal fish, invertebrates), which often support local economies. However, these ecosystems face strong anthropogenic pressure caused by intensive exploitation. In these ecosystems one of the major components responsible for primary production is the microphytobenthos, microscopic algae that inhabit intertidal sediments and forms dense biofilms at the sediment surface. Microphytobenthos provides an important energy source for the estuarine food web, has a central role for carbon flow in coastal sediments, and contributes to sediment stabilization. In spite of this key role in the functioning of coastal ecosystems, only few studies deal with microphytobenthos ecology, biology and physiology, and even less with microphytobenthos as a source for useful metabolites. Indeed, most microalgae studied are planktonic, rarely diatoms, almost never benthic, whereas the global microalgal diversity is largely dominated by diatoms, and microphytobenthos remains a 'secret garden' with a great potential in research and development.

The **Nantes Culture Collection** (NCC) is dedicated to the preservation, the storage and the assessment of microalgae, mostly being benthic species. NCC is referenced in the '*World Data Center for Microorganisms*' as 'NCC WDCM 856' since 2002, and it is the world's only collection hosting mainly benthic diatom strains. With 40 genus and more than 300 strains, including *ca.* 100 'blue diatoms', NCC is a real conservatory of microphytobenthos diversity mainly originating from the French Atlantic coast.

Currently, the NCC offers services as the distribution of strains and related products (culture medium, concentrate, lyophilisate) to academics and companies, either in the context of scientific program or for sale.

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