HAB-SEACHIP

BIOSENSORS TO DETECT HARMFUL ALGAE IN MARINE ENVIRONMENTS

The HAB-SEACHIP project aims to improve the methods designed to support the monitoring, forecasting, adaptation, protection and economic exploitation of marine and coastal environments. Some harmful algal blooms (HABs) produce toxins which make shellfish unfit for human consumption. These bloom episodes affect both health and the economy. A sensitive method for detecting HABs quickly would be a major asset. Thus this project aims to produce a biosensor sensitive enough to work with the alert thresholds for these algae that are harmful to the aquaculture sector of the economy. Currently, conventional monitoring techniques take a long time and require highly specialised taxonomic skills. The new sensor will respond to our need to automate and simplify identification of species producing phytotoxins which are responsible for serious food poisoning.

Spin-offs and future developments

By the end of the project, several detection and quantification tools had been developed. These are suitable for use in laboratories and have good prospects for use in monitoring. The new, original gravimetric detection transducer which was developed is 30 times more sensitive than a conventional system. It has many applications, not limited to the marine environment; these include detecting microorganisms, GMOs, cyanobacteria and pollutants. However, during the project period no prototype was developed or tested in a marine environment which allowed microalgae to be detected in sea water and had all the necessary modules for an automated biosensor.

- Several scientific publications
- DVD on the development of biochips: ‘A DNA biochip to detect toxic microalgae’ for users of the REPHY network (in French).

Partners

COM_PROJECTS_CATEGORIE_PARTNER_ENTREPRISES

Greiner Bio-One, Courtabœuf

Research centers

Ifremer, Brest [Project Developer]
CEA, Marcoule
CNRS LISE, Paris
INSA, Toulouse

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- Agence Nationale de la Recherche

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