

## **MAREX- Exploring Marine Resources for Bioactive Compounds: From Discovery to Sustainable Production and Industrial Applications**

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Biodiversity in the seas is only partly explored, although marine organisms are excellent sources for many industrial products. Through close co-operation between industrial and academic partners, the MAREX project will collect, isolate and classify marine organisms, such as micro- and macroalgae, cyanobacteria, sea anemones, tunicates and fish from the Atlantic, Pacific and Indian Oceans as well as from the Mediterranean, Baltic and Arabian Seas. Extracts and purified compounds of these organisms will be studied for several therapeutically and industrially significant biological activities, including anticancer, anti-inflammatory, antiviral and anticoagulant activities by applying a wide variety of screening tools, as well as for ion channel/receptor modulation and plant growth regulation. Chromatographic isolation of bioactive compounds will be followed by structural determination. Sustainable cultivation methods for promising organisms, and biotechnological processes for selected compounds will be developed, as well as biosensors for monitoring the target compounds. The work will entail sustainable organic synthesis of selected active compounds and new derivatives, and development of selected hits to lead compounds. The project will expand marine compound libraries. MAREX innovations will be targeted for industrial product development in order to improve the growth and productivity of European marine biotechnology. MAREX aims at a better understanding of environmentally conscious sourcing of marine biotechnology products and increased public awareness of marine biodiversity and potential. Finally, MAREX is expected to offer novel marine-based lead compounds for European industries and strengthen their product portfolios related to pharmaceutical, nutraceutical, cosmetic, agrochemical, food processing, material and biosensor applications.

### **Coordinator**

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### **Other participants**

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- EGE UNIVERSITESI
- IMEGO AB
- NATIONAL INSTITUTE OF OCEANOGRAPHY
- American University of Beirut
- XENTION LTD
- UNIVERSIDAD CATOLICA DEL NORTE
- ABO AKADEMI
- UNIVERZA V LJUBLJANI
- UNIVERSIDAD DE LA LAGUNA
- VALTION TEKNILLINEN TUTKIMUSKESKUS
- UNIWERSYTET GDANSKI
- KATHOLIEKE UNIVERSITEIT LEUVEN
- UNIVERSITE DE STRASBOURG
- Universidad de Antofagasta
- BIOVICO SP ZOO
- Euroespes Bioetnologia S.A.
- BIOTECHMARINE

**Start date** 01/08/2010

**End date** 31/07/2014

**Duration** 48 mesi

**Project cost** 7.9 million euro

**Project Funding** 6 million euro

**Subprogramme Area** Novel marine bioactive compounds for European industries

**Contract type** Large-scale integrating project