

THE BLUEHUMAN GOAL

To promote the valorization of marine resources from the Atlantic Area, as well as fisheries by-products, improving the industrial process and the development of certain stages of high added value products completely developed in the sectors of biomedicine and global well-being. All of that will be achieved using blue biotechnology as a tool and a partnership made up by companies and specialized research groups focused on innovation.

SPECIFIC GOALS

- ▶ To start structured and permanent collaborations between research centers and companies in such a way that an industrial tissue specialized in production and trading of high added value products becomes consolidated.
- ▶ To foster the use and exploitation of marine biological resources from the European Atlantic coast in new biotechnological sectors.
- ▶ To contribute to the development of a Sustainable Smart Growth as expressed in the EUROPE2020 Strategy.
- ▶ To develop the critical mass in the area which is represented by a significant but disconnected number of research groups and companies, setting up synergies and alliances to guide their abilities towards a common challenge directed to innovation.

CONSORTIUM:



ASSOCIATED PARTNERS:



FINANCED BY:

Atlantic Area Transnational Program 2014 - 2020
Priority: Innovation



COORDINATED BY

Prof. Rui L. Reis / Dr. Tiago H. Silva
Universidade do Minho - 3B's Research Group
AvePark - Parque de Ciência e Tecnologia,
Zona Industrial da Gandra
4805-017 Barco - Guimarães. Portugal
<http://www.3bs.uminho.pt>



BLUE BIOTECHNOLOGY AS A ROAD FOR INNOVATION ON HUMAN'S HEALTH

AIMING SMART GROWTH
IN ATLANTIC AREA

Code number: EAPA_151/2016

<http://bluehuman.cetmar.org>



ACTIVITIES AND EXPECTED RESULTS:



MARINE ORIGIN BIOMATERIALS FOR TISSUE ENGINEERING

This Activity is developed in the field of Tissue Engineering (TE); it intends to tackle the value of marine material (with reduced risk of zoonosis) for medical application by developing innovative biomaterials and assess their performance in the context of tissue regeneration. It involves actions where purified marine materials (medically considered) will be used to develop suitable scaffolds, drug delivery systems and blended in advanced therapies as a proof of concept.

▶ EXPECTED RESULTS:

Hydrogels based in jellyfish collagen for cartilage therapies.

Functionalization of biomaterials with delivery devices for cartilage regeneration.

Polymeric systems for cell encapsulation.

Blends of marine origin biopolymers as platforms for wound healing.



MEDICAL DEVICES

This Activity is focused in the development of medical devices based on marine origin material forecasting therapies for bones, cartilage and skin pathologies. It will also develop wound healing bandages combining jellyfish collagen and other marine origin compounds. The goal is proving the high potential of the material isolated from marine by-products in this high added value sector of medical devices.

▶ EXPECTED RESULTS:

Scaffolds of shark collagen and shark calcium phosphates for bone regeneration.

Functional scaffolds based in collagen-based composites.

Trilayered scaffold based in marine origin materials for regeneration of osteochondral defects.

Dressings for skincare application, as wound protection.

Marine ceramics for bone tissue therapies.



MARINE INGREDIENTS FOR COSMETIC, WELL-BEING AND HEALTHCARE PRODUCTS

The goal of this Activity is the identification of new marine natural products (from macroalgae, halophytes and cyanobacteria) with bioactivities interesting for SMEs in the field of cosmetics, well-being and health. The extracts, their fractions and purified compounds showing a particular biological activity will be included in pilot tests at industrial level when the complementary expertise and the technical resources of the Project partners will be required.

▶ EXPECTED RESULTS:

Extracts from marine resources with bone anabolic properties.

Extracts from marine resources with anti-oxidant, antimicrobial and/or anti-biofilm activities.

Extracts from marine resources with anti-obesity activity.

Nanocosmetics: particles for delivering collagen (gelatine) and hyaluronic acid hydrolysates from marine sources.



DISCLAIMER

This document covers activities implemented with the financial assistance of the INTERREG Atlantic Area. It only reflects the author's view, thus the Atlantic Area Programme authorities are not liable for any use that may be made of the information contained therein.