



MARBIOTECH

EMERGENCE OF A NEW AQUACULTURE SECTOR PRODUCING MARINE WORMS FOR USE IN HUMAN HEALTH

The object of the MARBIOTECH project is to develop a new aquaculture industry sector in France for the production of marine worms (*Arenicola marina*). The intention is also to industrially develop molecules extracted from the worms of interest in medical applications with significant economic and health potential. Since 2007, the company Hémarina has been working on the oxygen-carrying properties of extracellular haemoglobins obtained from marine annelids and has registered 14 international patent families relating to this research.

The challenge now is to establish and manage production of this biomass in France by developing pilot hatcheries and on-growing units to guarantee the necessary supply for the projected developments in human health. The project will also focus on characterising and validating the quality of this raw material and the extracellular haemoglobins extracted from it.

Four areas of therapeutic research and development will be covered in order to understand how these molecules function within living organisms - organs, tissue and cells. The properties of the extracellular haemoglobins extracted from the annelids will be used to develop therapeutic applications relating to oxygen deprivation, and various new products will be placed on the market in the short and medium term:

- Products for tissue engineering and biological substitutes,
- New oxygenating dressings for treating chronic wounds,
- Therapeutic application for preserving liver transplants,
- Solutions for treating ischaemic diseases (such as anaemia, haemorrhagic shock, etc.).

Partners

Companies

Hemarina, Morlaix [\[Project Developer\]](#)
Aquastream, Ploemeur

Research centers

Agrocampus Ouest - site de Begmeil,
Fouesnant et site de Rennes
EFS Bretagne, Établissement Français du
Sang, site de Brest
LIOAD (Laboratoire d'Ingénierie Ostéo-
Articulaire et Dentaire), Inserm UMR791,
Nantes

Funders

- Fonds Unique Interministériel
- Bpifrance
- Conseil régional de Bretagne
- Conseil régional des Pays de la Loire
- Conseil départemental du Finistère
- Conseil départemental du Morbihan
- Agglomération de Morlaix
- Agglomération de Lorient

Labelisation

22/11/2013

Overall budget

4 723 K€