CHITOWOUND

Biotechnological tools implementation for new wound healing applications of byproducts from the crustacean seafood processing industry

COFASP ERA-net

MarineBiotech

PROJECT FACTSHEET

JOINT CALL COFASP – ERA-MBT

DECEMBER 2016

ABSTRACT

Crustacean shells are an abundant marine biomass containing valuable compounds with unique biological, physical/chemical and mechanical properties. Global aquaculture and catch of crustaceans yield > 10 million tons of biomass annually and the considerable amount of shells from this industry is currently a waste byproduct. The annual global catch the shrimp species *P. borealis* is more than 350 000 MT (FAO), and today only a minor fraction of the available harvested raw material is utilized for chitin/chitosan production. The most important product from crustacean shells is chitosan which is manufactured at about 13 000 tons per year and serve growing multi-sectorial markets. At present the chitosan produced is mainly used for water treatment as a flocculant, and for production of glucosamine for the health food market. However, chitosan is also used as a wound healing promoting component in gels, bandages and dressings for treatment of chronic wounds.

Current bottlenecks for expanded applications relates to the processes for their extraction and recovery which suffer from low yields and batch to batch variations with low reproducibility in the end product. Furthermore, current production processes for chitosan involves use of harsh chemicals and is highly energy consuming. Especially, in Asian countries were production of chitosan mainly takes place, this leads to both an environmental burden and also a significant hazard for the workers at such productions facilities. Thus, there is a great potential and motivation for improving these processes by introducing green chemistry, i.e. exploring the use of biotechnological tools like enzymes.

In the current project we will focus on developing more efficient and environmentally friendly processes for manufacturing of chitosan, and to produce chitosans that are targeting the wound healing market.

More information can be found on the COFASP website.

Sector:

- Seafood processing

Topic:

- Explore opportunities for the use of biotechnological tools

Total costs*:
€ 884.000

Funding granted*:
€ 847.000

Duration:
3 years (2017-2019)

** Exact amount may change after completion of national contracts*

Kjell Morten Varum, Project Coordinator
Norwegian University of Science and Technology, Norway

CONSORTIUM

Name	Organisation	Country
Kjell Morten Varum	Norwegian University of Science and Technology	Norway
Vassilis Bouriotis	Institute of Molecular Biology and Biotechnology, Foundation of Research and Technology	Greece
Vasile OSTAFE	West University of Timisoara	Romania
Håvard Sletta	SINTEF	Norway
Rando Tuvikene	Tallinn University	Estonia

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