## Project goals

- Development of economically and ecologically sustainable processes to obtain brown algae from the Baltic Sea
- Setup of a database for the identification of suitable fucoidans
- Pilots for fucoidan-based applications in ophthalmology, regenerative medicine (tissue engineering) and cosmetics
- Establishment of a German-Danish value chain around the use of fucoidans

## Project data

- 8 project partners
- 8 network partners
- March 2017 to February 2020
- 3.8 million Euro budget, thereof 2.2 million Euro funds
- FucoSan is supported by Interreg Germany-Denmark with funding of the European Regional Development Fund

## Contact

Prof. Dr Alexa Karina Klettner, project coordinator  
University Medical Centre Schleswig-Holstein  
Campus Kiel  
Department of Ophthalmology  
Arnold-Heller-Straße 3  
24105 Kiel, Germany

**Project Management**  
DSN Connecting Knowledge, Kiel, Germany

Mail: info@fucosan.eu  
You are welcome to subscribe to our newsletter:  
www.fucosan.eu
There are fucoidans with various bioactive functions in brown algae. Fucoidans must be available in high reproducible quality and sufficient quantity for targeted use in medicine and cosmetics.

Since the modes of action of the fucoidans vary greatly, several algae species from different regions that are harvested at different times are investigated and characterised in the project - both chemically and biologically.

Database
All test results flow into a database. On the basis of this, the scientists select the most promising candidates to test their applicability.

The process chain at FucoSan

Pilot applications
On the basis of the database, the scientists select the most suitable fucoidans and test them for their suitability in the fields of ophthalmology (age-related macular degeneration), regenerative medicine (tissue engineering) and cosmetics.

Ophthalmology
Fucoidans can inhibit VEGF and thus be used in the treatment of age-related macular degeneration, a widespread eye disease that is a major cause of blindness in Germany and Denmark.

Bone regeneration
Fucoidans are also valued for their positive influence on inflammation, vascular supply and tissue regeneration. With their antimicrobial properties, infections in the bone can possibly be treated.

Cosmetics
The antioxidant effect of fucoidans counteracts skin aging. Therefore, the prototype of a natural anti-aging skin care product containing fucoidans as an active ingredient will be developed in the pilot run.

Business models
FucoSan creates a value chain: from the processes for extracting the algae to the processing of the fucoidans for various applications until market exploration and the development of business models for commercial utilisation.

Project partners
Kiel University
- Pharmaceutical Biology
- Technology Management

CRM – Coastal Research & Management GbR

GEOMAR Helmholtz Centre for Ocean Research Kiel

OceanBASIS GmbH

University of Southern Denmark
- Department of Chemical Engineering, Biotechnology and Environmental Technology
- Mads Clausen Institute

Technical University of Denmark
- Department of Chemical and Biochemical Engineering

Odense University Hospital
- Orthopaedic Research Unit

University Medical Centre Schleswig-Holstein, Campus Kiel
- Department of Ophthalmology
- Department of Orthopedics and Trauma Surgery

Network partners
- Bioprene – Denmark’s Life Science Cluster
- Bundesverband Aquakultur e.V.
- Dr. Willmar Schwabe GmbH & Co. KG
- Fraunhofer Research Institution for Marine Biotechnology and Cell Technology
- Life Science Nord Management GmbH
- Roskilde University
- SUBMARINER Network for Blue Growth EEIG
- The European Society for Marine Biotechnology