



FUCOSAN

The ABC Conference
Algae Bioactive Compounds – from Research to Innovation

Tuesday, 25th August – Wednesday, 26th August 2020



Interreg
Deutschland - Danmark



EUROPEAN UNION

Dette projekt finansieres af midler fra Den Europæiske Fond for Regionaludvikling. | Dieses Projekt wird gefördert mit Mitteln des Europäischen Fonds für regionale Entwicklung.

The ABC Conference

Programme for Tuesday, 25th August

For a **technical introduction**,
please log in at 12.30 already!



12.40

Welcome addresses

Alexa Klettner, FucoSan Lead partner, University Medical Center Schleswig-Holstein, Campus Kiel, Clinic for Ophthalmology (Germany)
Lewe Kuhn, Interreg Deutschland-Danmark

13.00

Key Note: Conventional and sustainable bioprocesses for the extraction of antiherpetic oligo- and polysaccharides from the red seaweeds

Nathalie Bourgougnon, University of South Brittany (France)

13.45

Session 1: Cultivation, processing, fucoidan source

The session is chaired by Susanne Alban, Kiel University, Pharmaceutical Institute (Germany) & Knud Villy Christensen, University of Southern Denmark, Institute of Chemical Engineering, Biotechnology and Environmental Technology, Odense (Denmark).

Aquaculture of the brown algal genus *Fucus* in the Baltic Sea

Rafael Meichssner, University Kiel, Physiology and Biotechnology of the Plant Cell, and CRM - Coastal Research & Management, Kiel (Germany)

Postharvest processing of *Sargassum duplicatum* for tea product

Muhamad Nur Ghoyatul Amin, Undergraduate Program of Fisheries Product Technology, Faculty of Fisheries and Marine, Universitas Airlangga (Indonesia)

More variables, more problems: rethinking fucoidan bioactivity by dimension reduction

Signe Helle Ptak, University of Southern Denmark, Department of Chemical Engineering, Biotechnology and Environmental Technology, Odense (Denmark).

Characterization of the molecular structure of fucoidans using size-exclusion chromatography with multiple detection

Sandesh Neupane, Kiel University, Pharmaceutical Institute (Germany)

15.00

Coffee break

15.20

Session 2: Enzymes and metabolomics in brown algae research

The session is chaired by Anne Meyer, Technical University of Denmark, Department of Chemical and Biochemical Engineering, Lyngby (Denmark) & Deniz Tasdemir, GEOMAR Helmholtz Centre for Ocean Research Kiel, Marine Natural Products Chemistry (Germany).

Functional characterization of an endo-fucoidanase from *Formosa haliotis* for the degradation of α -(1-3)/ α -(1-4) fucoidans

Marlene Vuillemin, Technical University of Denmark, Department of Biotechnology and Biomedicine, DTU Bioengineering (Denmark)

Fucoidan: enzymatic purification and modification

Maria Dalgaard Mikkelsen, Technical University of Denmark, Enzyme Technology, Section for Protein Chemistry and Enzyme Technology, Department of Biotechnology and Biomedicine (Denmark)

FTIR Fingerprinting for fucoidanases activity assessment

Vy Tran Nguyen Ha, Department of Bioengineering, Technical University of Denmark and NhaTrang Institute of Technology Research and Application, Vietnam Academy of Science and Technology, Nhatran (Socialist Republic of Vietnam)

Automated tools for identifying the massive metabolome and bioactive constituents of Baltic *Fucus vesiculosus*

Deniz Tasdemir, GEOMAR Centre for Marine Biotechnology (GEOMAR-Biotech), Research Unit Marine Natural Products Chemistry, GEOMAR Helmholtz Centre for Ocean Research Kiel, and Kiel University (Germany)

16.30

Closure

Ad libitum

Conference dinner @home

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Programme for Wednesday, 26th August



- 09.00 **Welcome address**
Alexa Klettner, FucoSan Lead partner, University Medical Center Schleswig-Holstein, Campus Kiel, Clinic for Ophthalmology (Germany)
- 09.05 **Key Note: Fucoidan in future applications – an industrial perspective**
Trond Helgerud, Seaweed R&D Manager, DuPont Nutrition & Bioscience at DuPont (Norway)
- 09.50 **Session 3: Bioactivities of fucoidans 1**
The session is chaired by Sabine Fuchs, University Medical Center Schleswig-Holstein, Campus Kiel, Department of Orthopaedics and Trauma Surgery, Campus Kiel (Germany) & Ming Ding, Odense University Hospital, Orthopaedic Research Unit.
- Comparison of structurally different fucoidans extracted from brown algae regarding their potential antitumor activity**
Kaya Bittkau, Kiel University, Pharmaceutical Institute (Germany)
- Effects of fucoidans on oxidative stress protection, VEGF secretion and functions in ocular cells depending on the brown algae species, molecular weight and purity of the extract**
Philipp Dörschmann, University Medical Center Schleswig-Holstein, Campus Kiel, Clinic for Ophthalmology, Kiel (Germany)
- Evaluation of protective effects of fucoidans from *Fucus* species and *Laminaria hyperborea* against oxidative stress and iron-induced cell death**
Sarah Apitz, University Medical Center Schleswig-Holstein, Campus Kiel, Clinic for Ophthalmology, Kiel (Germany)
- 10.45 **Coffee break**
- 11.00 **Session 4: Bioactivities of fucoidans 2**
Effect of chemically well characterized fucoidan extracts from *Fucus evanescens* on angiogenesis and osteogenesis in mono- and co-culture systems mimicking bone tissue environment
Julia Ohmes, University Medical Center Schleswig-Holstein, Campus Kiel, Department of Orthopaedics and Trauma Surgery, Campus Kiel (Germany)
- Impact of different fucoidan fractions on endothelial functionality, activation and inflammatory response during bacterial infections**
Nora Kirsten, University Medical Center Schleswig-Holstein, Campus Kiel, Department of Orthopaedics and Trauma Surgery, Campus Kiel (Germany)
- Effects of fucoidan extracts derived from different *Fucus* species on human mesenchymal stem cells and impact on bone health and vascularization**
Fanlu Wang, University Medical Center Schleswig-Holstein, Campus Kiel, Department of Orthopaedics and Trauma Surgery, Campus Kiel (Germany)
- 11.35 **Lunch break**

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11.35 **Lunch break**

12.00 **Session 5: Blue bioeconomy – changes and challenges**

The session is chaired by Levent Piker, CRM – Coastal Research & Management oHG and oceanBASIS GmbH, Kiel (Germany) and Ferran Giones, University of Southern Denmark, Mads Clausen Institute, SDU Technology Entrepreneurship and Innovation, Sønderborg (Denmark)

Low hanging fucoidan on a fast track to the market

Susanne Woldmann, oceanBASIS GmbH (Germany)

European regulations on macroalgae products

Anu Lähteenmäki-Uutela, Finnish Environment Institute (Finland)

Ingenious knowledge recombination or interdisciplinary chaos? The effect of interdisciplinarity on R&D performance

Daniel Laufs, Kiel University, Institute of Business Administration and Innovation Management, Technology Management Research Group (Germany)

Promoting scientific impact by data sharing: choosing the right data platform in Life Sciences

Mareike Peters, Kiel University, Institute of Business Administration and Innovation Management, Technology Management Research Group (Germany)

SUBMARINER Network's Accelerator for Blue Growth

Efthalia Arvaniti, SUBMARINER Network for Blue Growth (Germany)

13.25 **Panel discussion**

Panelists: Alexa Klettner (UKSH), Susanne Alban (CAU), Trond Helgerud (Du Pont), Rüdiger Schulz (CAU, Botanisches Institut und Botanischer Garten, AG Physiologie und Biotechnologie der pflanzlichen Zelle), Maria Dalgaard Mikkelsen (DTU)

Moderation: Ralf Duckert, DSN Connecting Knowledge

14.00 **Closure**