



Future Perspectives of Blue Biotechnology in the Baltic Sea Region

Imke Schneemann Norgenta, Kiel & Hamburg
Jutta Wiese KiWiZ at GEOMAR, Kiel
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- SUBMARINER Blue Biotech: introductory statements
Jutta Wiese – Centre for Marine Natural Product Research at GEOMAR
Imke Schneemann – Norgenta North German Life Science Agency
- Blue Biotechnology of the Baltic Cyanobacteria – Cooperation, Research and Education at the University of Gdańsk
Hanna Mazur-Marceiz - Institute of Oceanography, University of Gdańsk
- Sustainable use of cultured seaweed
Jenny Veide Vilg - Chalmers University of Technology
- Skin Care and protection against MRSA colonization by the application of cyanobacteria microparticles
Gerold Lukowski - Institute of Marine Biotechnology e.V
- The Fraunhofer Research Institution for Marine Biotechnology (EMB)
Ronny Marquardt - Fraunhofer Research Institution for Marine Biotechnology
- The KiWiZ - Centre for Marine Natural Product Research
Antje Labes - Centre for Marine Natural Product Research at GEOMAR



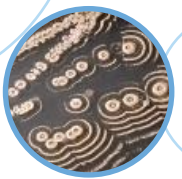
- Oceans cover over 70% of the Earth's surface
- Ocean constitutes over 90% of the habitable space on the planet
- 50-80% of all life on earth is found under the ocean surface
- 3.3 billion years of evolution
- All 36 known animal phyla can be found in the ocean (12 can be found on land)
- 0,01% of marine micro-organisms are discovered

➔ Tremendous Bio-Diversity

➔ The global market for marine biotechnology products was around 2.8 billion € in 2010 and will be around 3.2 billion € in 2015.



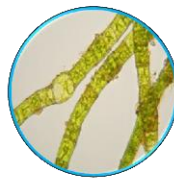
Bacteria



Macroalgae



Cyanobacteria



Sponges

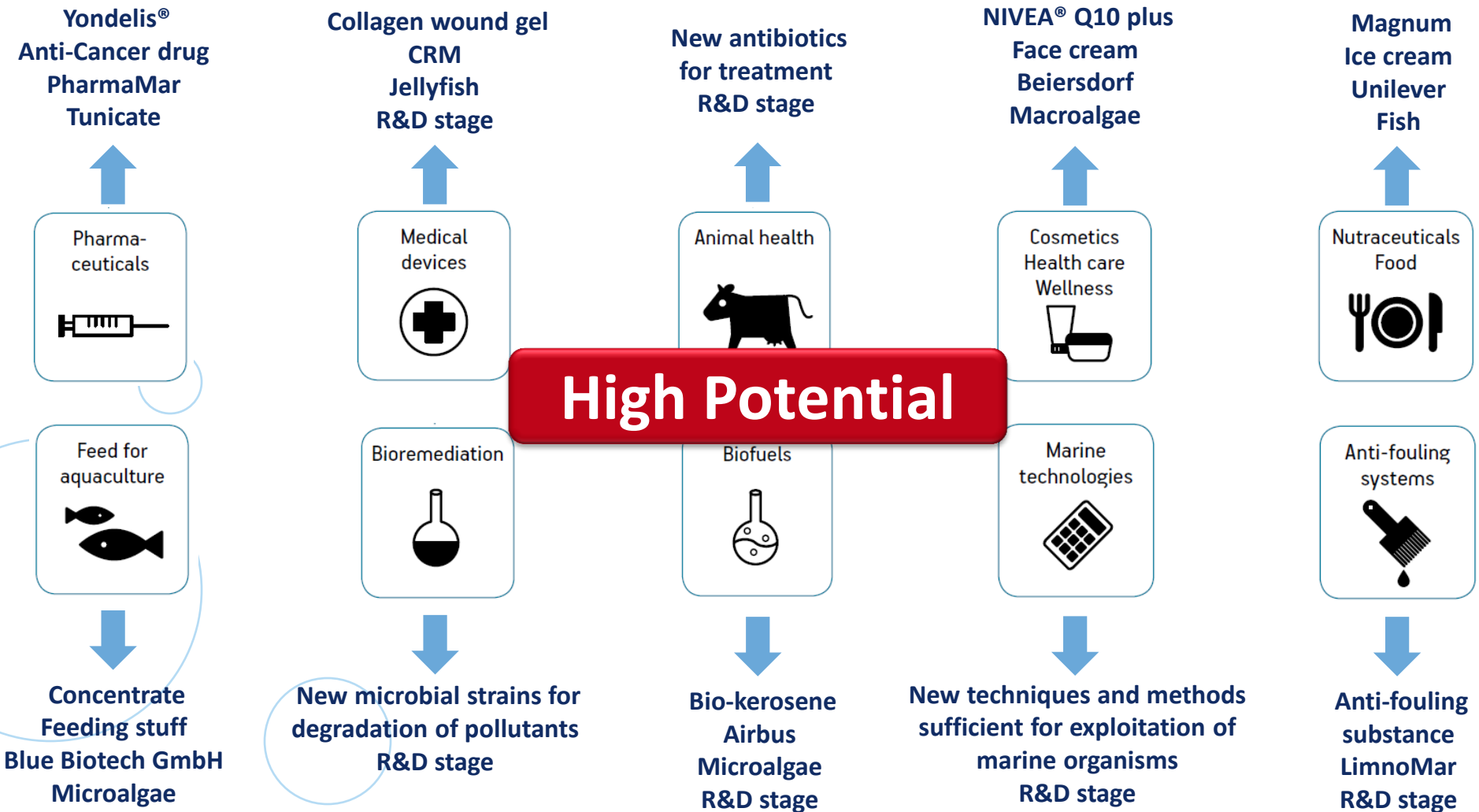


Microalgae



Fungi

First Achievements





Comprehensive assessment of the potential for innovative and sustainable uses of Baltic marine resources



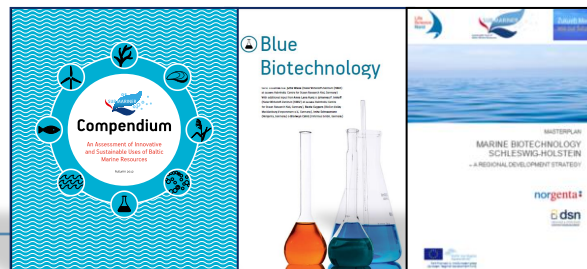


Strengths

- Baltic Sea organisms show great potential for exploration
- Experts & laboratories in place
- Technologies for bioprospecting of Baltic organisms exist in some regions => good basis for technology transfer
- Existing networks (e.g. Life Science Nord, ScanBalt) provide basis for promotion and cooperation
- Schleswig-Holstein / Denmark strategies can serve as “models”

Weaknesses

- Low awareness about “Blue” potential => market not developed
- Skills shortage esp. in cross-cutting disciplines
- Lack of venture capital & investment for R&D / start-ups
- Low technology transfer, networking & collaboration
- Limited knowledge on scale of environmental impacts





Opportunities

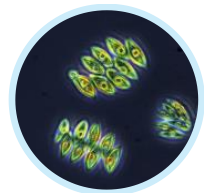
- Growing market needs / markets for in pharmaceutical, cosmetics, food industry & environmental solutions
- Specific BSR NEEDS exist
- Growing interest in marine biotechnology as source for greener & smarter economies
- Good underlying resources, i.e. universities, scientists, facilities => synergies / complementarity
- BSR regional cooperation
- Growing public (EU) support
- Positive perception of Baltic Sea Region brand products

Threats

- Lack of “real case” samples for blue biotechnology solutions
- Short term project related funding cycles not suitable for long term processes
- Lack of policies in some BSR countries to support biotechnology
- Lack of financial support due to economic & financial crisis
- Difficulties to create win-win solutions for public-private partnerships

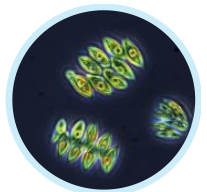


- **OBJECTIVE:** Efficient and effective use of Blue Biotechnology research capacities across the BSR
- **NETWORK COORDINATOR:**
Ministry of Economic Affairs, Employment, Transport and Technology Schleswig-Holstein (DE), Finnish Environment Institute – SYKE (FI) and BioCon Valley Mecklenburg-Vorpommern e.V. (DE)
- **ACTORS:** Biotechnology clusters, relevant research institutions, companies





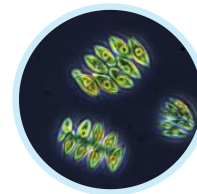
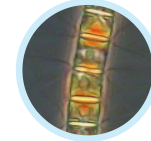
- **Develop pan-Baltic research agenda and create respective pan-Baltic research groups**
 - Use of biomarine material for medical and health applications
- **Identify and test Baltic Sea organisms for various applications**
 - Evaluate possibilities of macroorganisms in production of high value compounds
- **Establish a BSR centre for bioprospecting of Baltic Sea microorganisms**
 - Creating a (virtual) centre comprising all actors from public research institutions and companies working at the research and the sustainable use of marine microorganisms



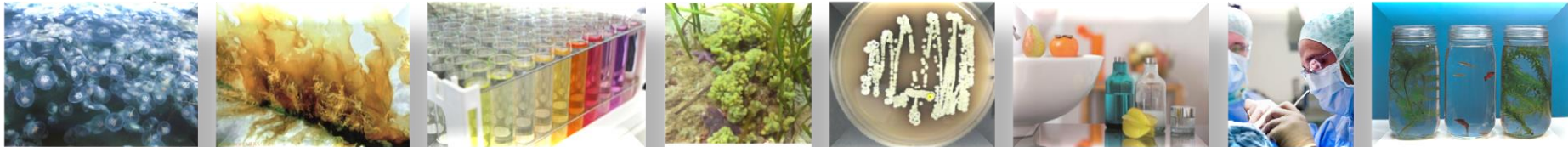
Funding opportunities



- Horizon 2020
- ERA-SME
- BSR Programme
- BONUS
- EuroTransBio
- ERA-IB2
- ERA-NET marine Biotech
- CORNET
- EuroStars
- IMI
- ...



Thank you!!!



www.submariner-project.eu

jwiese@geomar.de

imke.schneemann@norgenta.de