

Blue Biotechnology @ ILVO

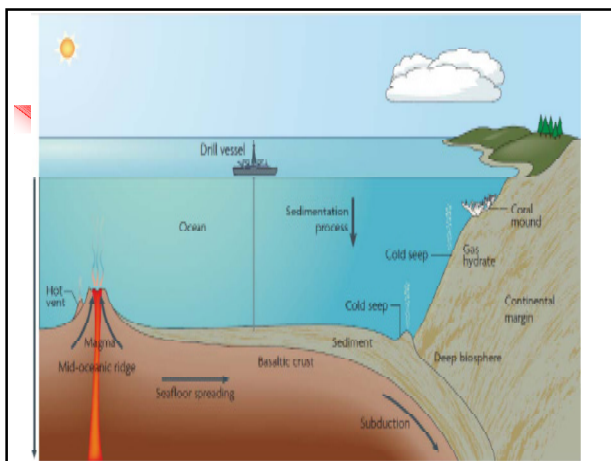
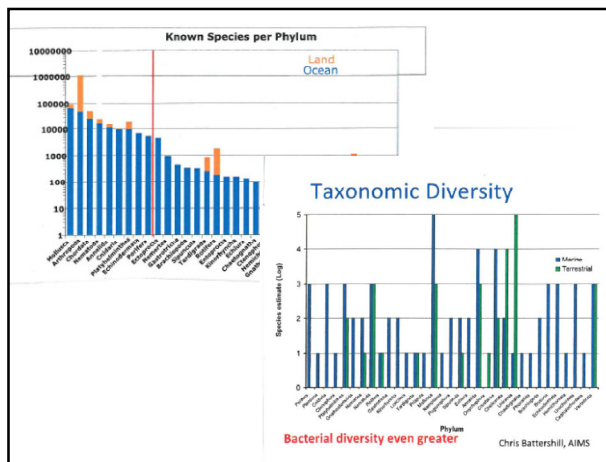
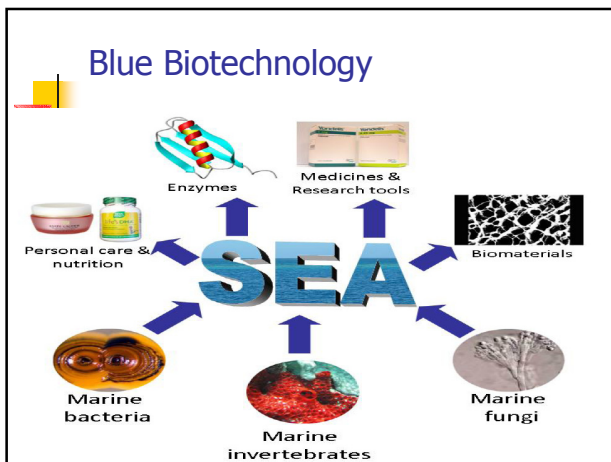
VLIZ-
werkvergadering Mariene
Biotechnologie in Vlaanderen

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Outline

- Intro- Blue Biotechnology @ ILVO
 - Authenticity
 - Population Genetics
 - Metagenomics
 - Transcriptomics



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- **Genetic Authenticity**
 - Characterisation of marine products- from fresh product till processed products
- **Population genetics**
 - Invasive species- *Mnemiopsis leidyi*
 - Brill- Sara Vandamme (PhD)
- **Metagenome sequencing**
 - Different marine samples- screening for microbial biota
- **Transcriptomics**-Impact of pollutants on different organisms
 - Genome wide array
 - Array Less transcriptomics

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Genetic Authenticity

- Characterisation of marine products- from fresh product till processed products
- Analysis based on FINS-PCR

- **Development of a reference database**
- (cfr Belgisch Staatsblad KB 07.08.1996)

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Genetic Authenticity

- Characterisation of marine products- from fresh product till processed products

Population genetics

- Invasive species- Mnemiopsis leidyi
- Brill- Sara Vandamme (PhD)

Metagenome sequencing

- Different marine samples- screening for microbial biota

Transcriptomics-Impact of pollutants on different organisms

- Genome wide array
- Array Less transcriptomics

Invasive species



- Interreg MEMO
- Risk assessment for the 2Seas Marine Ecosystem of the jellyfish Mnemiopsis leidyi
- Problem – Caspian/Black Sea
- MSFD- Marine Strategy Framework Directive- descriptors for GES



Population Genetics of Mnemiopsis leidyi

- Questions we want to answer?
- Different populations- boundaries for different populations?
- Reintroduction from ballast water
- Different population characterized via Population genetics –
- Characterization of populations- Microsatellite or SNP... To be discussed

Population genetics on Brill and link with fisheries management

- Characterization of population of tarbot and brill with Microsatelite analysis
- Link with Fisheries management

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- Brill-Tarbot

Metagenome sequencing

- Different marine samples- screening for microbial biota

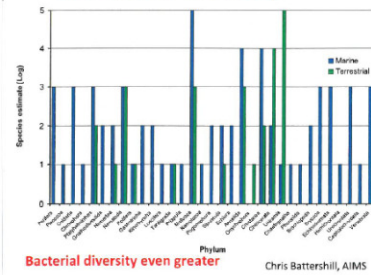
Transcriptomics-Impact of pollutants on different organisms

- Genome wide array
- Array Less transcriptomics

Metagenome analysis

- Opportunities for characterization of microbial consortia in Marine Sciences.
- Different marine microbiota
- 'the great plate count anomaly'

Taxonomic Diversity



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Transcriptomics- Impact of pollutants on different organisms

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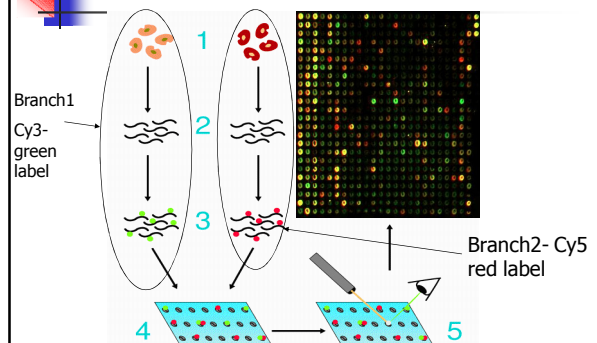
Transcriptomics: Impact assesement of pollutants

- What is the chemical and biological status of the marine ecosystem.
- Now: typical with DNA array

Transcriptomics

- Non-model organisms:
- SSH cDNA array
 - Limited number of genes
 - cDNA vs Oligo

Typical experiment – Two branches





HTS for transcriptomics

- Development of DNA array on non-model species

Whole genome array

- Complete genome sequencing
- Development of oligo-whole genome array

Array-less transcriptomics

- On the long run- screening of mRNA profiles without DNA array



Thanks for your attention

- Further questions/info

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