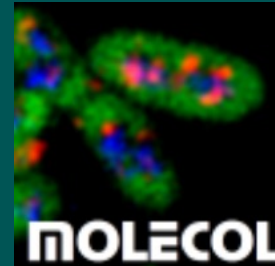


POLYSACCHARIDE DEGRADATION IN MARINE VERRUCOMICROBIOTA

Nicole Von Possel

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Max Planck Institute for Marine Microbiology
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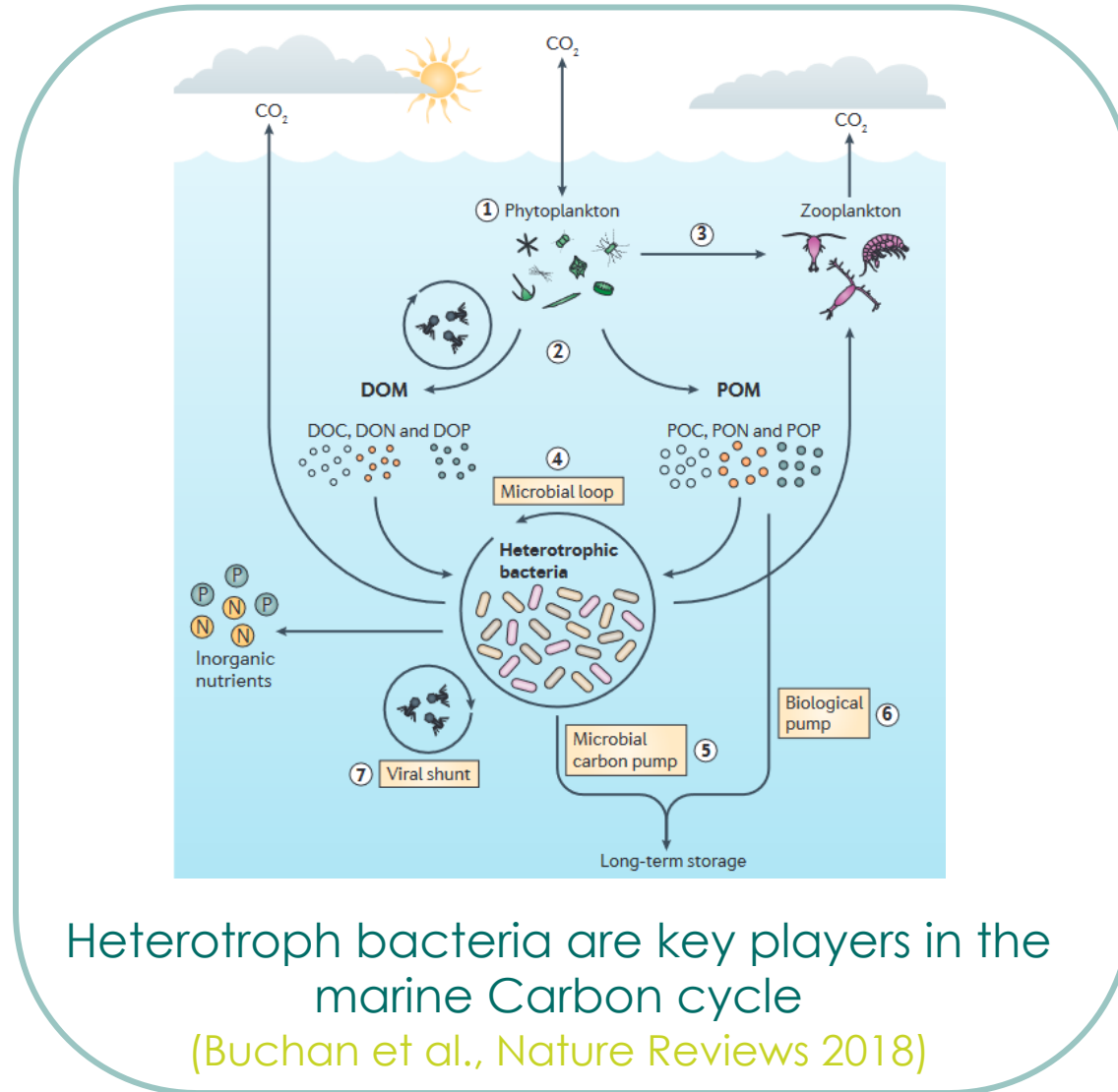
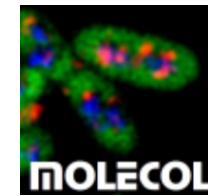
Supervisors: Dr. **Luis H. Orellana** & Prof. Dr. **Rudolf Amann**



MAX-PLANCK-INSTITUT
FÜR MARINE MIKROBIOLOGIE

Emerging Bioinformatics Approaches for Microbial Ecogenomics (EBAME8)
23rd October – 3rd November 2023

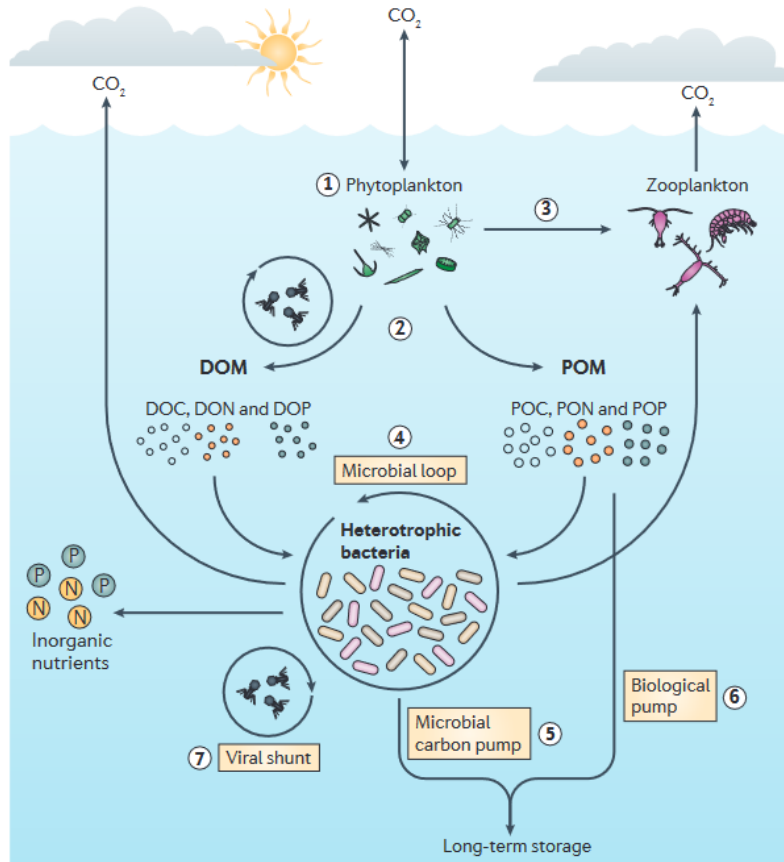
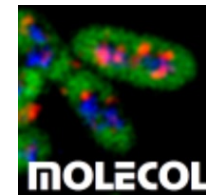
VERRUCOMICROBIOTA ARE SPECIALIST CONSUMERS OF COMPLEX POLYSACCHARIDES



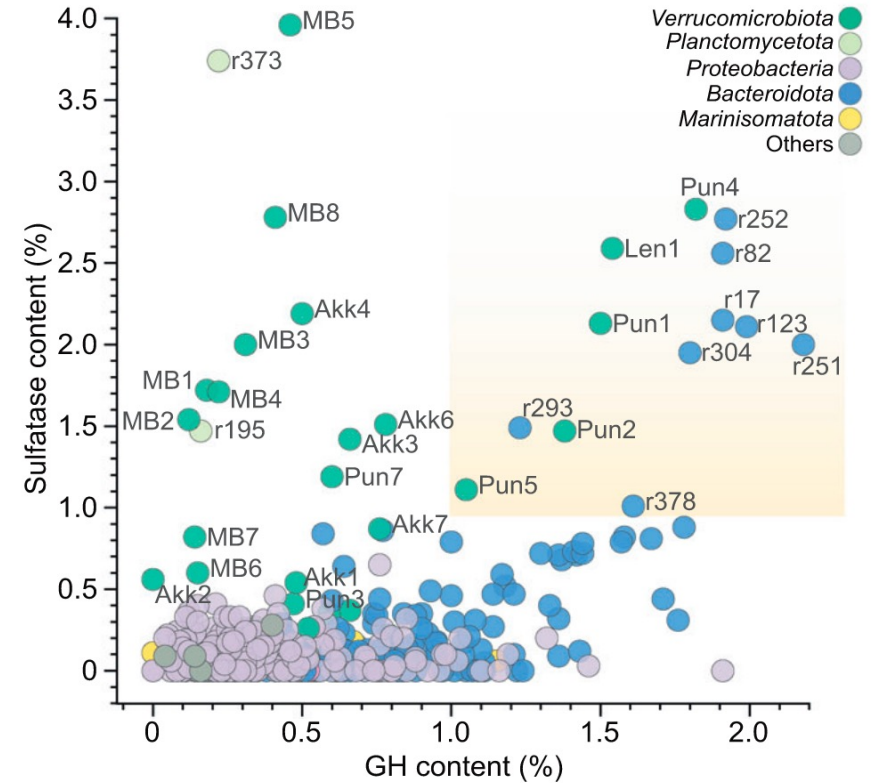
Heterotroph bacteria are key players in the marine Carbon cycle

(Buchan et al., Nature Reviews 2018)

VERRUCOMICROBIOTA ARE SPECIALIST CONSUMERS OF COMPLEX POLYSACCHARIDES



Heterotroph bacteria are key players in the marine Carbon cycle
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Verrucomicrobiota have the genetic potential for the degradation of complex polysaccharides (Orellana et al., ISMEJ 2021)

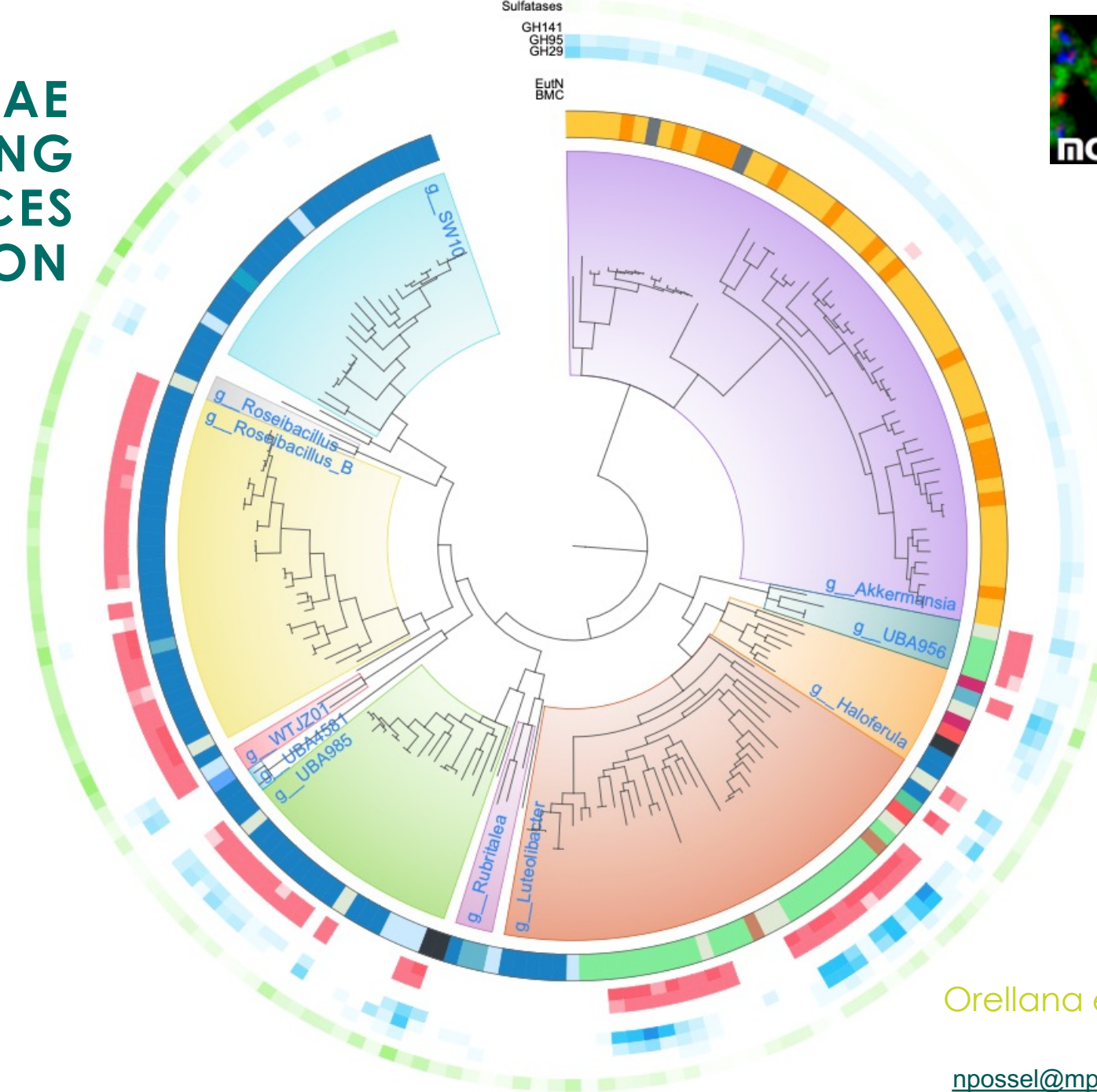
AKKERMANSIACEAE EXHIBIT CLUSTERING BASED ON SOURCES AND DEGRADATION CAPABILITIES

Sources

- Marine
- Freshwater
- Soil
- Gut
- Human engineered

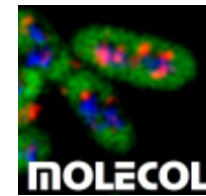
Genes

- BMCs
- Fucosidases
- Sulfatases

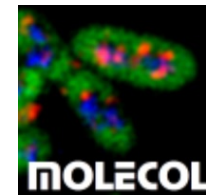


Orellana et al., in preparation

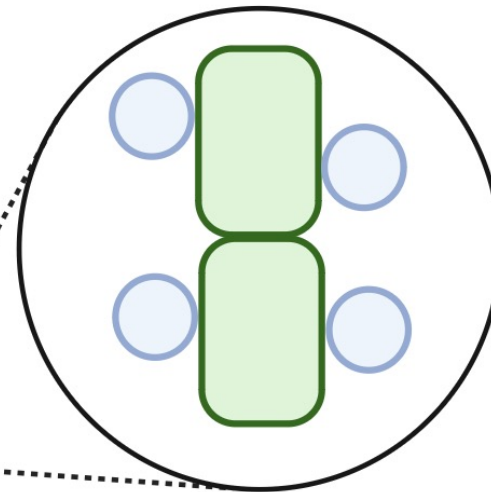
npossel@mpi-bremen.de



What makes fucoidan-degrading marine Verrucomicrobiota a highly-specialized group?



Ectocarpus sp.



1. What are the **interactions** between the algae and the bacteria?
2. What are the **evolutionary adaptations** of the bacteria?