



Characterization of the Microbial Community in Wadden Sea sediments

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Project outline

Identification

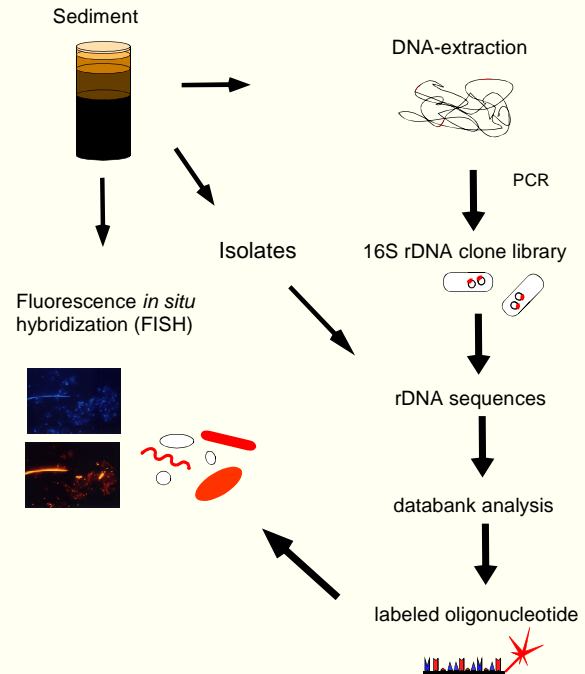
Our study focusses on the diversity, structure and seasonal dynamics of microbial communities in the upper layers of Wadden Sea sediments. Since the identification and the quantification of key populations is essential for ecological studies, we investigate the diversity and abundance of important functional groups.

To cover a broad diversity we combine traditional cultivation with cultivation-independent techniques. Members of functionally relevant groups (e.g. SO_4^{2-} -reducing bacteria, fermenting bacteria) will be enriched and isolated. Additionally a 16S rDNA clone library from Wadden Sea sediments will be established. Based on cultivation and clone library results, fluorescently labeled 16S rRNA targeted probes will be applied to quantify these organisms *in situ* in a high vertical resolution.

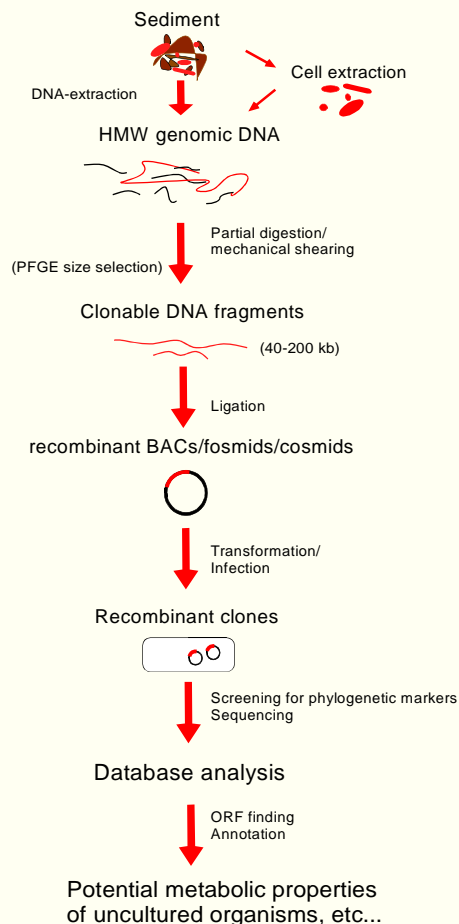
Linking identity and activity

Since most bacteria are not cultivated yet, alternative approaches are essential to clarify their potential *in situ* activity. Besides physiological characterization of the isolates, environmental genomics and mRNA probing will help to address this major topic in microbial ecology.

The rRNA- approach



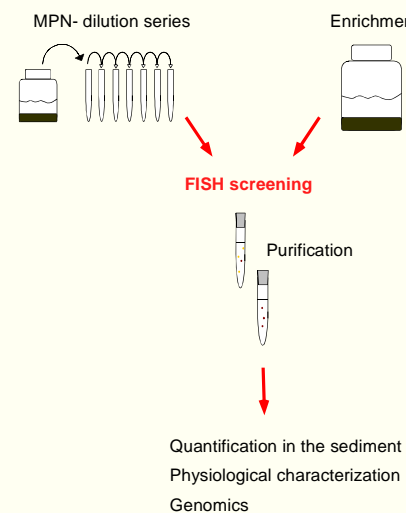
Construction of a metagenome library



Cultivation of members of relevant functional groups

- ➔ Fermenting bacteria
- ➔ Sulfate reducing bacteria

Directed isolation of probe targeted species



References

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