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Giant barrel sponges in diverse habitats: a story about the metabolome

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Stellingen

Propositions accompanying the thesis

Giant barrel sponges in diverse habitats: a story about the metabolome

1. In metabolomics, only compounds that are extracted can be analyzed. Therefore, the quality of metabolomics studies is dependent on how well the extraction parameters are controlled to obtain more metabolites. (Chapter 3)
2. The metabolome of an organism is the result of the interactions between several biological and environmental factors. Consequently, the metabolome of the giant barrel sponge reflects the conditions in a geographical location. (Chapter 4)
3. Ageing is mixture of all kinds of biological processes and measuring the age of many organisms remains a challenging task. Using metabolomic profiling, changes in the metabolomic profile can be uncovered that can help to understand the lifecycle of organisms that lack clear features, such as sponges. (Chapter 5)
4. Genes are the blueprint and metabolites are their outcomes. This is exemplified by the fact that different genetic groups of giant barrel sponges can have diverse metabolic responses to changes in their environment. (Chapters 5 and 6)
5. Annotation is still a bottleneck in metabolomics studies that the broader use of databases and *in silico* tools have not been able to overcome.
6. Compared with conventional studies that target specific compounds, metabolomics studies aim for a holistic approach maintaining an objective point of view. However, this objectivity can often be lost when data obtained are interpreted subjectively by the selection of different methods and workflows.
7. Although marine sponges are often referred to as some of the simplest animals, they are very complex systems that still hold many secrets that can be discovered and learned from.
8. Marine environments nowadays experience changes so rapidly that recording the effects that these changes might have on marine ecosystems has become a serious challenge for scientists.
9. As for intercultural interactions, a common language must be selected for proper communication. To draw proper conclusions, we need a common scientific language.
10. Science is to interpret facts that might seem irrational in a rational way.
11. Personal growth comes from continuing to do those things that do not come to us naturally.