Monika Wagner, Virol Mycol 2016, 5:2(Suppl)
http://dx.doi.org/10.4172/2161-0517.C1.012



# Diversity, distribution and species specificity in Antarctic lecideoid lichens correlated to newly generated climate zones

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The Antarctic continent with its most extreme climate conditions provides an environment where only the hardiest organisms can survive. However the mechanisms that connect climate and life's diversity in Antarctica are still poorly understood owing to limited climate data and taxon sampling in many areas of the continent. The current study investigates the role of climatological factors (temperature and humidity) driving lichen diversity distribution and species specificity in Antarctica using saxicolous lecideoid lichens as a model system. The mycobionts of these lichens are associated with several *Trebouxia* species as photobionts. Even so the various mycobiont species show different patterns of distribution genetic diversity and phylogenetic relationships to their photobionts. To demonstrate the correlations of distribution patterns and species specificity Antarctic climate zones were generated by combining twelve zones based on annual mean temperature with six zones predicated on annual precipitation. Molecular investigations show a wide range of species specificity from the mycobionts to their photobionts. It varies from very low as the widespread *Lecidea cancriformis* with the ability to choose different *Trebouxia* species available all over the continent to highly specific as *Lecidella greenii* which is restricted to only one *Trebouxia* species which merely occurs in milder habitats.

## Biography

Monika Wagner is working on her PhD since fall 2015. She works on lecideoid lichens of the Antarctica with a focus on climate and spatial modeling of photobiont-mycobiont-interactions. Her work is part of the project 'Diversity, ecology and specificity in Antarctic lichens' financed by the Austrian science fund FWF.

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