**DECIPHERING THE ECOLOGICAL ROLES IN SUBANTARCTIC LICHENS: SPECIALIZED METABOLITES WITH PHOTOPROTECTIVE AND ANTIOXIDANT ACTIVITIES**

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Lichen can survive to strong UV radiations specially when exposed on rocks and they undergo desiccation / rehydration cycles which induce free radicals. In Subantarctic area, lichens are widespread and particularly exposed to these abiotic stresses. In defense and regulation, it is supposed that specialized metabolites have a critical role to protect both partners of the lichen symbiosis. Thus, to understand the ecological role of lichen metabolites, we studied eight lichen species (*Aspicilliopsis macrophtalma, Lecanora disjungenda, Orceolina kerguelensis, Pannaria dichroa, Placopsis bicolor, Pseudocyphellaria crocata, Tephromela atrocaesia, Usnea trachycarpa*), collected in the French Subantarctic islands, Kerguelen and Crozet archipelagos, that differed in their growth form and substrate types. Each species was extracted by solvents with increasing polarities (*n*-heptane, ethyl acetate, water) and their chemical composition was analyzed by LC-MS². In this way, a dereplicative approach using the MS/MS fragmentation pattern allowed the annotation of compounds detected in each extract. Specialized metabolites were visualized using molecular network. In parallel, the superoxide scavenging activity and the UV photoprotective properties were evaluated for all extracts. Statistical multivariate analyses were used to correlate the biological activities and the extracts related to their chemical constituents. This investigation provides evidence for a positive correlation between some metabolites from *T. atrocaesia* and *A macrophtalma* and the photoprotective activities of lichens as well for *U.trachycarpa, A. macrophtalma, T. atra, L.disjugenda and P.crocata* for the ROS scavenging activity.