

Supplementary Table 1. Contents of major and trace elements in the studied maritime and continental Antarctic lichens ($\mu\text{g} / \text{g}$ dry weight)

Element	Maritime Antarctic					Continental Antarctic		
	<i>U. aurantiaco-atra</i> (n = 5)	<i>P. muscigena</i> (n = 3)	<i>P. caesia</i> (n = 4)	<i>R. terebrata</i> (n = 3)	<i>T. brialmontii</i> (n = 3)	<i>U. aprina</i> (n = 3)	<i>U. decussata</i> (n = 3)	<i>U. sphacelata</i> (n = 3)
N	6770.0 $\pm$ 750.0	19410.0 $\pm$ 350.1	47740.5 $\pm$ 875.6	13540.0 $\pm$ 165.7	37920.0 $\pm$ 430.4	21100.0 $\pm$ 300.0	11170.0 $\pm$ 300.9	4970.0 $\pm$ 640.5
Ca	5635.0 $\pm$ 100.5	5985.0 $\pm$ 380.5	2595.0 $\pm$ 157.3	1650.0 $\pm$ 230.0	2240.0 $\pm$ 120.5	716.0 $\pm$ 200.0	78.0 $\pm$ 20.3	1720.0 $\pm$ 380.3
K	1280.0 $\pm$ 160.8	4145.0 $\pm$ 180.8	5245.0 $\pm$ 364.5	1705.0 $\pm$ 97.5	4280.0 $\pm$ 100.3	3565.0 $\pm$ 300.5	1835.0 $\pm$ 200.6	1220.0 $\pm$ 100.5
P	275.0 $\pm$ 20.3	1570.0 $\pm$ 128.7	3960.0 $\pm$ 278.5	452.0 $\pm$ 37.6	1760.0 $\pm$ 97.8	1460.0 $\pm$ 220.6	530.0 $\pm$ 19.6	251.0 $\pm$ 51.2
Mg	2120.0 $\pm$ 140.2	3975.0 $\pm$ 235.5	1645.0 $\pm$ 320.7	5330.0 $\pm$ 120.4	1350.0 $\pm$ 87.5	899.0 $\pm$ 120.5	378.0 $\pm$ 75.3	281.0 $\pm$ 35.7
Na	400.0 $\pm$ 75.5	1420.0 $\pm$ 177.0	1090.0 $\pm$ 305.2	1675.0 $\pm$ 105.8	2175.0 $\pm$ 120.5	365.0 $\pm$ 75.3	222.0 $\pm$ 70.3	199.0 $\pm$ 40.6
Mn	4.8 $\pm$ 0.7	235.0 $\pm$ 23.6	59.0 $\pm$ 7.6	7.5 $\pm$ 1.2	31.0 $\pm$ 5.8	22.0 $\pm$ 2.0	14.0 $\pm$ 3.0	7.9 $\pm$ 1.0
Fe	240.3 $\pm$ 15.4	9270.0 $\pm$ 226.7	1425.0 $\pm$ 153.4	234.0 $\pm$ 28.9	959.0 $\pm$ 137.3	1095.0 $\pm$ 131.0	1620.0 $\pm$ 160.0	560.0 $\pm$ 35.6
B	1.9 $\pm$ 0.1	6.2 $\pm$ 0.3	4.1 $\pm$ 0.2	2.7 $\pm$ 0.7	11.0 $\pm$ 1.6	2.1 $\pm$ 0.6	1.6 $\pm$ 0.8	1.1 $\pm$ 0.1
Zn	4.0 $\pm$ 0.6	24.0 $\pm$ 3.5	41.0 $\pm$ 4.5	5.5 $\pm$ 1.3	38.0 $\pm$ 7.9	38.0 $\pm$ 15.0	24.0 $\pm$ 3.7	10.0 $\pm$ 1.1
Cu	1.6 $\pm$ 0.8	34.0 $\pm$ 4.5	12.0 $\pm$ 1.6	3.4 $\pm$ 1.2	19.0 $\pm$ 5.3	7.1 $\pm$ 1.3	15.0 $\pm$ 1.3	2.3 $\pm$ 0.5
Pb	0.097 $\pm$ 0.001	0.292 $\pm$ 0.003	0.030 $\pm$ 0.001	0.012 $\pm$ 0.001	0.014 $\pm$ 0.001	0.061 $\pm$ 0.003	0.148 $\pm$ 0.007	0.269 $\pm$ 0.001
Hg	0.360 $\pm$ 0.002	0.047 $\pm$ 0.001	0.059 $\pm$ 0.003	0.421 $\pm$ 0.004	0.119 $\pm$ 0.001	0.386 $\pm$ 0.001	0.189 $\pm$ 0.070	3.33 $\pm$ 0.01
Cd	0.017 $\pm$ 0.001	0.268 $\pm$ 0.002	0.572 $\pm$ 0.003	0.052 $\pm$ 0.001	1.120 $\pm$ 0.003	0.023 $\pm$ 0.001	0.038 $\pm$ 0.002	0.011 $\pm$ 0.001
As	< 0.05	11.36 $\pm$ 0.75	1.156 $\pm$ 0.003	0.505 $\pm$ 0.001	2.187 $\pm$ 0.014	< 0.05	0.211 $\pm$ 0.001	< 0.05

Supplementary Table 2. Antioxidant activity measured in Antarctic lichen thalli ($\mu\text{g} / \text{g}$ dry weight); AW and AL - water- and lipid-soluble antioxidative capacity in lichen extracts; $n = 3$ for each lichen species.

Lichen species	Antioxidant activity, $\mu\text{g} / \text{g}$ dry weight	
	AW	AL
Maritime Antarctic		
<i>U. aurantiaco-atra</i>	1780 ± 230	750 ± 90
<i>P. muscigena</i>	250 ± 70	750 ± 120
<i>P. caesia</i>	500 ± 95	4010 ± 169
<i>R. terebrata</i>	1390 ± 320	500 ± 87
<i>T. brialmontii</i>	14740 ± 750	11260 ± 220
Continental Antarctic		
<i>U. aprina</i>	2500 ± 230	1500 ± 300
<i>U. decussata</i>	190 ± 70	500 ± 95
<i>U. sphacelata</i>	630 ± 87	500 ± 97