Environmental Science Processes & Impacts

ROYAL SOCIETY OF CHEMISTRY

CORRECTION

View Article Online
View Journal | View Issue

Check for updates

Cite this: *Environ. Sci.: Processes Impacts*, 2022, **24**, 486

Correction: Concentrations and properties of ice nucleating substances in exudates from Antarctic sea-ice diatoms

Yu Xi,[a] Alexia Mercier,[b] Cheng Kuang,[c] Jingwei Yun,[a] Ashton Christy,[a] Luke Melo,[a] Maria T. Maldonado,[c] James A. Raymond[d] and Allan K. Bertram*[a]

DOI: 10.1039/d2em90004a

rsc.li/espi

Correction for 'Concentrations and properties of ice nucleating substances in exudates from Antarctic sea-ice diatoms' by Yu Xi *et al.*, *Environ. Sci.: Processes Impacts*, 2021, **23**, 323–334, DOI: 10.1039/D0EM00398K.

In Fig. 4 of the original paper, the wrong data was plotted for *Skeletonema marinoi*. Mistakenly, the authors plotted the number of INS per mass of DOC instead of the number of INS per mass of total material for *Skeletonema marinoi*. The correct Fig. 4 is shown below. The conclusion reached from the comparison of INS concentrations of different diatom samples in the original paper was that the ice nucleating abilities of sea-ice diatom and temperate diatom samples were similar. The correct Fig. 4 provides stronger support for this conclusion. Some of the references in the original caption were incorrect and the new, correct references have now been added in the caption below.

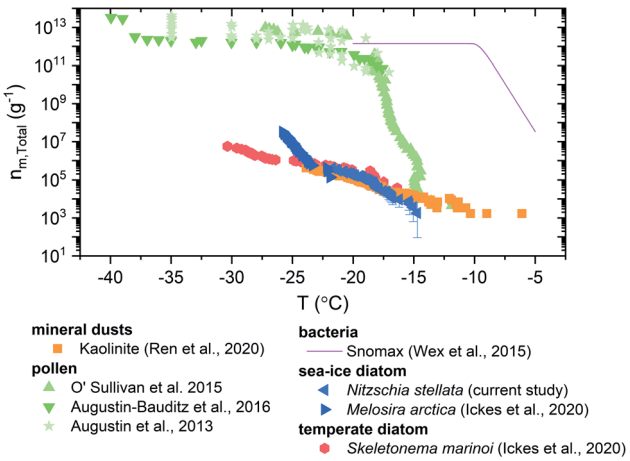

Fig. 4 Number of INSs per mass of total material, $n_{m,total}$, for the *Nitzschia* supernatant sample and cultured sea ice diatom and temperate diatom samples from Ickes *et al.*[1] For the cultured samples, the total mass of material in the cultures was estimated using their reported number of cells[1] and assuming a cell density of 1 g cm^{-3} and cell volume of 653 and 125 μm^3 for *Melosira arctica* and *Skeletonema marinoi* respectively.[2] The error bars were calculated based on 95% confidence intervals from the nucleation statistics.[3] Also included for comparison are INSs per mass of material for other atmospherically relevant INSs.[1,4–8]

The Royal Society of Chemistry apologises for these errors and any consequent inconvenience to authors and readers.

[a]*Department of Chemistry, University of British Columbia, 2036 Main Mall, Vancouver, BC V6T 1Z1, Canada. E-mail: bertram@chem.ubc.ca*
[b]*Department of Chemistry, Sorbonne University, 4 Place Jussieu, 75005 Paris, France*
[c]*Department of Earth, Ocean & Atmospheric Sciences, University of British Columbia, 2020 – 2207 Main Mall, Vancouver, BC V6T 1Z4, Canada*
[d]*School of Life Sciences, University of Nevada, 4505 S. Maryland Pkwy., Las Vegas, NV89154, USA*

Open Access Article. Published on 15 February 2022. Downloaded on 8/1/2025 12:55:43 PM. This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

This journal is © The Royal Society of Chemistry 2022

Open Access Article. Published on 15 February 2022. Downloaded on 8/1/2025 12:55:43 PM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

References

1 L. Ickes, G. C. E. Porter, R. Wagner, M. P. Adams, S. Bierbauer, A. K. Bertram, M. Bilde, S. Christiansen, A. M. L. Ekman, E. Gorokhova, K. Höhler, A. A. Kiselev, C. Leck, O. Möhler, B. J. Murray, T. Schiebel, R. Ullrich and M. E. Salter, The ice-nucleating activity of Arctic sea surface microlayer samples and marine algal cultures, *Atmos. Chem. Phys.*, 2020, **20**, 11089–11117.

2 I. Olenina, S. Hajdu, L. Edler, A. Andersson, N. Wasmund, S. Busch, J. Göbel, S. Gromisz, S. Huseby, M. Huttunen, A. Jaanus, P. Kokkonen, I. Ledaine and E. Niemkiewicz, Biovolumes and size-classes of phytoplankton in the Baltic sea, *Balt. Sea Environ. Proc.*, 2006, **106**, 1–144.

3 T. Koop, B. Luo, U. M. Biermann, P. J. Crutzen and T. Peter, Freezing of $HNO_3/H_2SO_4/H_2O$ solutions at stratospheric temperatures: nucleation statistics and experiments, *J. Phys. Chem. A*, 1997, **101**, 1117–1133.

4 H. Wex, S. Augustin-Bauditz, Y. Boose, C. Budke, J. Curtius, K. Diehl, A. Dreyer, F. Frank, S. Hartmann, N. Hiranuma, E. Jantsch, Z. A. Kanji, A. Kiselev, T. Koop, O. Möhler, D. Niedermeier, B. Nillius, M. Rösch, D. Rose, C. Schmidt, I. Steinke and F. Stratmann, Intercomparing different devices for the investigation of ice nucleating particles using Snomax® as test substance, *Atmos. Chem. Phys.*, 2015, **15**, 1463–1485.

5 D. O'Sullivan, B. J. Murray, J. F. Ross, T. F. Whale, H. C. Price, J. D. Atkinson, N. S. Umo and M. E. Webb, The relevance of nanoscale biological fragments for ice nucleation in clouds, *Sci. Rep.*, 2015, **5**, 8082.

6 S. Augustin-Bauditz, H. Wex, C. Denjean, S. Hartmann, J. Schneider, S. Schmidt, M. Ebert and F. Stratmann, Laboratory-generated mixtures of mineral dust particles with biological substances: characterization of the particle mixing state and immersion freezing behavior, *Atmos. Chem. Phys.*, 2016, **16**, 5531–5543.

7 S. Augustin, H. Wex, D. Niedermeier, B. Pummer, H. Grothe, S. Hartmann, L. Tomsche, T. Clauss, J. Voigtländer, K. Ignatius and F. Stratmann, Immersion freezing of birch pollen washing water, *Atmos. Chem. Phys.*, 2013, **13**, 10989–11003.

8 Y. Ren, A. K. Bertram and G. N. Patey, Effects of inorganic ions on ice nucleation by the Al surface of kaolinite immersed in water, *J. Phys. Chem. B*, 2020, **124**, 4605–4618.