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Correction: High pressure single-molecule FRET studies of the lysine riboswitch: cationic and osmolytic effects on pressure induced denaturation

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Correction for 'High pressure single-molecule FRET studies of the lysine riboswitch: cationic and osmolytic effects on pressure induced denaturation' by Hsuan-Lei Sung *et al.*, *Phys. Chem. Chem. Phys.*, 2020, DOI: 10.1039/d0cp01921f.

Correction #1: The apportioning of support in the acknowledgements was incorrectly captured in the original document. The corrected acknowledgements should read:

Acknowledgements

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Correction #2: Furthermore, the writing and submission of this paper occurred in the first weeks of the COVID-19 shutdown for JILA and the University of Colorado in Boulder, requiring the authors to transfer multiple Word and EndNote files from a lab computer to a home computer. In the process an EndNote library was corrupted, which resulted in several errors in the referencing process not caught until the article appeared online. Below, we summarize corrections in the references, apologizing for any challenges this creates for the reader. A fully corrected pdf is available on request (and on the Nesbitt group website, <https://jila.colorado.edu/nesbitt/>).

| Location | Original reference given in published paper | Replacement reference from list of new references below |
|---------------------------|---|---|
| Page 2 | Ref. 37 | Ref. 1 |
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| Pages 4, 7, 8 (×2) and 11 | Ref. 10 | Ref. 5 |
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| Page 11 (×2) | Ref. 77 | Ref. 18 |

On page 1, ref. 11 should be deleted.

On page 6, ref. 55 should be replaced with ref. 11 from the published article.

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

References

- 1 T. O. Street, D. W. Bolen and G. D. Rose, A Molecular Mechanism for Osmolyte-Induced Protein Stability, *Proc. Natl. Acad. Sci. U. S. A.*, 2006, **103**, 13997–14002.
- 2 D. R. Canchi and A. E. García, Cosolvent Effects on Protein Stability, *Annu. Rev. Phys. Chem.*, 2013, **64**, 273–293.
- 3 D. Lambert, D. Leipply and D. E. Draper, The Osmolyte TMAO Stabilizes Native RNA Tertiary Structures in the Absence of Mg^{2+} : Evidence for a Large Barrier to Folding from Phosphate Dehydration, *J. Mol. Biol.*, 2010, **404**, 138–157.
- 4 P. H. Yancey and J. F. Siebenaller, Trimethylamine Oxide Stabilizes Teleost and Mammalian Lactate Dehydrogenases Against Inactivation by Hydrostatic Pressure and Trypsinolysis, *J. Exp. Biol.*, 1999, **202**, 3597–3603.
- 5 R. d. C. Barbosa and M. C. Barbosa, Hydration Shell of the TS-Kappa Protein: Higher Density than Bulk Water, *Phys. A*, 2015, **439**, 48–58.
- 6 D. E. Draper, D. Grilley and A. M. Soto, Ions and RNA Folding, *Annu. Rev. Biophys. Biomol. Struct.*, 2005, **34**, 221–243.
- 7 D. E. Draper, RNA Folding: Thermodynamic and Molecular Descriptions of the Roles of Ions, *Biophys. J.*, 2008, **95**, 5489–5495.
- 8 N. Tsukida, H. Muranaka, M. Ide, Y. Maeda and H. Kitano, Effect of Neutralization of Poly(acrylic acid) on the Structure of Water Examined by Raman Spectroscopy, *J. Phys. Chem. B*, 1997, **101**, 6676–6679.
- 9 E. D. Holmstrom, J. L. Fiore and D. J. Nesbitt, Thermodynamic Origins of Monovalent Facilitated RNA Folding, *Biochemistry*, 2012, **51**, 3732–3743.
- 10 J. C. Schlatterer, L. W. Kwok, J. S. Lamb, H. Y. Park, K. Andresen, M. Brenowitz and L. Pollack, Hinge Stiffness is a Barrier to RNA Folding, *J. Mol. Biol.*, 2008, **379**, 859–870.
- 11 T. J. Wilson and D. M. J. Lilley, Metal Ion Binding and the Folding of the Hairpin Ribozyme, *RNA*, 2002, **8**, 587–600.
- 12 R. Shiman and D. E. Draper, Stabilization of RNA Tertiary Structure by Monovalent Cations, *J. Mol. Biol.*, 2000, **302**, 79–91.
- 13 S. L. Heilman-Miller, D. Thirumalai and S. A. Woodson, Role of Counterion Condensation in Folding of the *Tetrahymena* Ribozyme. I. Equilibrium Stabilization by Cations, *J. Mol. Biol.*, 2001, **306**, 1157–1166.
- 14 J. J. Childress and B. A. Seibel, Life at Stable Low Oxygen Levels: Adaptations of Animals to Oceanic Oxygen Minimum Layers, *J. Exp. Biol.*, 1998, **201**, 1223–1232.
- 15 R. J. Ellis, Macromolecular Crowding: Obvious but Underappreciated, *Trends Biochem. Sci.*, 2001, **26**, 597–604.
- 16 J. Ma, I. M. Pazos and F. Gai, Microscopic Insights into the Protein-Stabilizing Effect of Trimethylamine N-Oxide (TMAO), *Proc. Natl. Acad. Sci. U. S. A.*, 2014, **111**, 8476–8481.
- 17 D. L. Pincus, C. Hyeon and D. Thirumalai, Effects of Trimethylamine N-Oxide (TMAO) and Crowding Agents on the Stability of RNA Hairpins, *J. Am. Chem. Soc.*, 2008, **130**, 7364–7372.
- 18 Q. Zou, B. J. Bennion, V. Daggett and K. P. Murphy, The Molecular Mechanism of Stabilization of Proteins by TMAO and its Ability to Counteract the Effects of Urea, *J. Am. Chem. Soc.*, 2002, **124**, 1192–1202.

