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Correction: Novel synthetic route for (parent) phosphetanes, phospholanes, phosphinanes and phosphhepanes

Stephan Reichl, Gábor Balázs and Manfred Scheer *Correction for 'Novel synthetic route for (parent) phosphetanes, phospholanes, phosphinanes and phosphhepanes' by Stephan Reichl *et al.*, *Chem. Sci.*, 2023, 14, 3834–3838, <https://doi.org/10.1039/D3SC00580A>.

In the above manuscript, we claimed *i.a.* that we reported the first synthesis of the parent phospholane, which was referred to as compound **10b**. On closer inspection of the literature, we have realized that our claim is erroneous, since this compound (**10b**) has been described in two prior papers.^{1,2} We regret overlooking these literature precedents and apologize for our oversight. The synthesis of **10b** that we describe is different from those in the two prior reports. The sections of the manuscript that are affected by our mistake are the following. Each entry is followed by a correction or corrected version, in parentheses.

Abstract: “The latter enables the selective synthesis of parent cyclic secondary phosphines (**10**) in an easy and straightforward way, including the first parent phospholane (**10b**).” (Corrected version: “The latter enables the selective synthesis of parent cyclic secondary phosphines (**10**) in an easy and straightforward way.”)

Introduction: The reaction of the spiro compounds 2–5 with nucleophiles leads to the formation of unprecedented heterocyclic parent phosphines **10a–d** including the first parent phospholane **10b**. (Corrected version: The reaction of the spiro compounds 2–5 with nucleophiles leads to the formation of unprecedented heterocyclic parent phosphines **10a–d**.)

Results and discussion: “To our surprise, (parent-)phospholane (HP(C₄H₈)) has not been reported so far.” (Correction: This sentence should be entirely omitted from the manuscript.)

Conclusion: In addition to this, we demonstrated that it is also possible to synthesise parent secondary phosphines derivatives **10a–d** *via* this route, as represented by the parent-phosphetane HP(C₃H₆) (**10a**) as well as the parent-phospholane HP(C₄H₈) (**10b**), which have been synthesised for the very first time. (Corrected version: “In addition to this, we demonstrated that it is also possible to synthesise parent secondary phosphines derivatives **10a–d** *via* this route, as represented by the parent-phosphetane HP(C₃H₆) (**10a**) as well as the parent-phospholane HP(C₄H₈) (**10b**).”)

Finally, we also wish to correct the following sentence “The ³¹P NMR spectra (THF-d₈) of **10b** show a doublet of triplets at $\delta = -70.8$ ppm (¹J_{P-H} = 187 Hz, ²J_{P-H} = 21 Hz)” which contained an erroneous ¹J_{P-H} coupling constant. The correct coupling constant is: ¹J_{P-H} = 180.3 Hz.

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

References

- 1 A. B. Burg and P. J. Slota, Chemistry of the C₄H₈P Ring: the Aminophosphine (CH₃)₂NPC₄H₈, the Cyclophosphine C₄H₈PH and the Tetracyclic Trimer (C₄H₈PBH₂)₃, *J. Am. Chem. Soc.*, 1960, **82**, 2148–2151, DOI: [10.1021/ja01494a015](https://doi.org/10.1021/ja01494a015).
- 2 M. Pfeil, T. A. Engesser, A. Koch, J. Junge, J. Krahmer, C. Näther and F. Tuczek, Oligodentate Phosphine Ligand with Phospholane End Groups: New Synthetic Access and Application to Molybdenum-Based Synthetic Nitrogen Fixation, *Eur. J. Inorg. Chem.*, 2020, **15–16**, 1437–1448, DOI: [10.1002/ejic.201901068](https://doi.org/10.1002/ejic.201901068).

