## TELLURENIUM CATION AS SELECTIVE CATALYST FOR REDUCTIVE COUPLING OF ALDEHYDES

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The activation of Si-H and B-H bond for use in hydrosilylation or hydroboration reactions is within the interest of many groups.<sup>[1]</sup> Although formation of alcohols is prioritized in hydrosilylation reactions with aldehydes, molecules that activate Si-H bond can also undergo reaction pathway towards ethers, but such molecules are quite rare in literature.<sup>[2,3,4]</sup>

standard hydrosilylation R C H

R

C=O + Et<sub>3</sub>SiH

reductive coupling cat

$$Cat:$$
 $Cat:$ 
 $C$ 

We have recently discovered a remarkable potential of N-coordinated tellurenium cation in activation of quite inert B-H bond in carborane cages. [5] Herein, we report that related tellurenium cation may serve as a catalyst that can selectively catalyze reductive coupling of aldehydes into symmetric ethers under mild reaction conditions. The fresh results from this field will be presented and discussed.

R
2
C=O + 2 Et<sub>3</sub>SiH 
$$\frac{DCM, 24 \text{ h}}{cat (1 \text{ mol}\%)}$$
 R

R = Aryl, alkyl

$$cat: \qquad \qquad \uparrow Bu$$

SbF<sub>6</sub>

The authors wish to thank the Czech Science Foundation (project No. 22-17230S) for the financial support.

<sup>[1]</sup> Pakulski, M. M. and M. Zaidlewicz. Stereoselective Synthesis 2. Stuttgart: Georg Thieme Verlag, 2011.

<sup>[2]</sup> Monsigny L., Thuéry P., Berthet J., and Cantat T. ACS Catalysis 2019 9 (10), 9025-9033.

<sup>[3]</sup> Liang T., Dong G., Li C., Xu X., and Xu Z. Organic Letters 2022 24 (9), 1817-1821.

<sup>[4]</sup> Ugarte R. A., Devarajan D., Mushinski R. M., Hudnall T. W. Dalton Trans., 2016, 45, 11150.

<sup>[5]</sup> Hejda, M.; Duvinage, D.; Lork, E.; Lyčka, A.; Černošek, Z.; Macháček, J.; Makarov, S.; Ketkov, S.; Mebs, S.; Dostál, L.; Beckmann, J. *Chem. Eur. J.*2021, 27, 14577–14581.