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SYNTHESIS OF SILYL SULFOLENES IN TANDEM TRANSORMATION FROM PROPARGYL SILANES IN LIQUID SO_2

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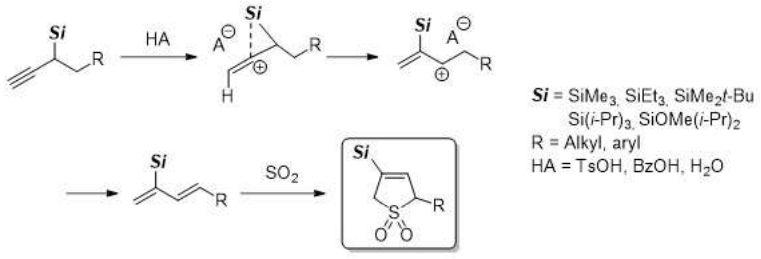
It is known that silicon can stabilize reactions of vinyl, allyl, allenyl and propargyl silanes, that proceeds *via* β-silyl carbenium ion and is more recognized as β-silicon effect. Several studies on the possible mode of stabilization from silicon shows two distinct pathways that may occur through vertically (e.g. hyperconjugation) or non-vertically (e.g. formation of silonium ion) stabilized carbocations [1]. Therefore, formation of cyclic silonium ion in combination with other stabilizing effects explains, possibility of 1,2-silyl migration.



Previously we have reported the use of propargylsilanes in the synthesis of silyl dienes and indenes by the catalytic amounts of strong Brønsted acids (TfOH, Tf_2NH, Tf_3CH) that involves 1,2-silyl shift [2]. Herein we report the use of liquid sulfur dioxide for this transformation as highly polar and Lewis acidic reaction media which offers possibility to use weaker acids (e.g. BzOH, TsOH). Moreover, in a tandem cheletropic addition process silyl sulfolenes are obtained from the *in situ* formed dienes.

Supervisor: *Dr. chem. M. Turks*

References:

[1] Labert, J. B., Zhao, Y., Emblidge, R. W., Salvador, L. A., Liu, X., So, J.-H., Chelius, E. C. Acc. Chem. Res., **1999**, 32, 183.
[2] Puriņš, M., Mishnev, A., Turks, M. J. Org. Chem., **2019**, 84, 3595.