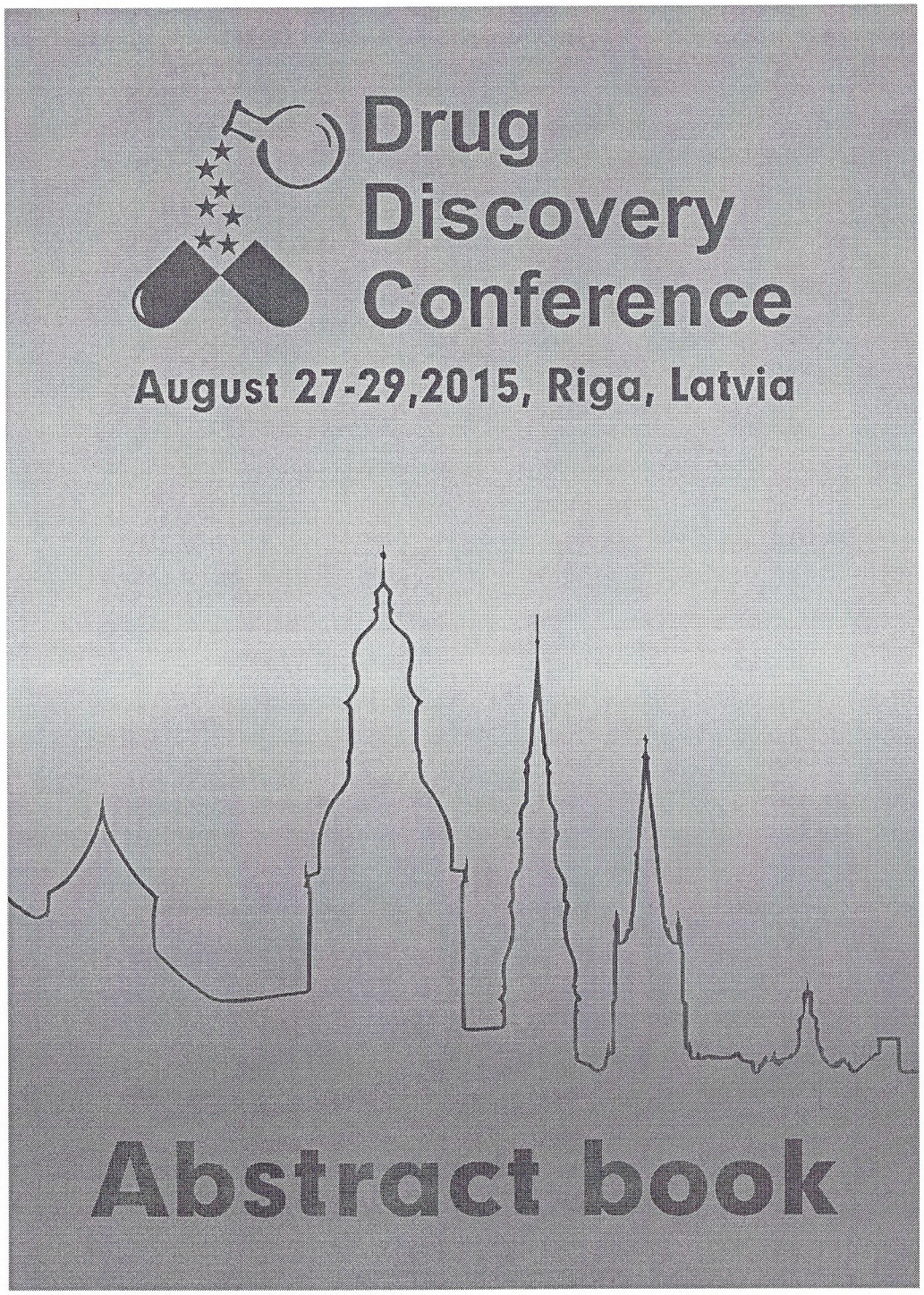

PP65. FROM METHALLYLSILANES TO METHALLYLSULFOXIDES: PPLICATION OF SILA-ENE REACTION OF SULFUR DIOXIDE

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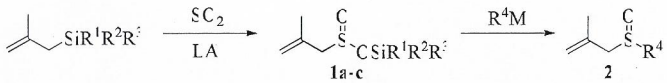
Structural motif of sulfoxides is present in many naturally occurring and biologically active compounds, that are used as medication. Sulfoxides are also well-recognized synthetic intermediates. They form complexes with transition-metals and are used in catalysis. The most common approaches for synthesis of sulfoxides are oxidation of sulfides and C-S bond formation in nucleophilic substitution reactions.

Herein we report an application of silyl sulfinates 1 in the synthesis of variously substituted methallylsulfoxides 2 (see Scheme 1). In order to optimize the reaction conditions for sulfoxide 2 synthesis we investigated influence of solvent, temperature, organometallic reagent and Lewis acid additive on sulfoxide 2 yield. We have also diversified silyl moiety in sulfinate 1 structure, examining trimethylsilyl- (1a), terc-butyldimethylsilyl- (1b) and triisopropylsilyl sulfinate (1c) in order to increase the yields of sulfoxides 2.



a $R^1 = R^2 = R^3 =$ Me **b** $R^1 = R^2 =$ Me $R^3 = t$-Bu **c** $R^1 = R^2 = R^3 = i$-Pr R^4 = aryl- alkyl- allyl- heterocyclic-

Scheme 1. Strategy of sulfoxide 2 synthesis

Experiments with Grignard reagents as nucleophiles and silyl sulfinates 2a,b as sulfinyl transfer reagents showed the most promising results. The nucleophilic attack of Grignard reagents was accelerated in toluene and in the presence of LiCl or ZnCl2 as Lewis acidic additives. The scope of the method has been demonstrated with the successful incorporation of aryl-, alkyl-, allyl-, and heterocyclic Grignard reagents. Under the given experimental conditions trialkylsilyloxy groups act as good leaving groups. Above described method gives opportunity to synthesize methallyl sulfoxides 2 in up to 83% yield.

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