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HOMOALLYLHALIDE SYNTHESIS FROM CYCLOPROPYLIDENES IN LIQUID SO_2 MEDIUM

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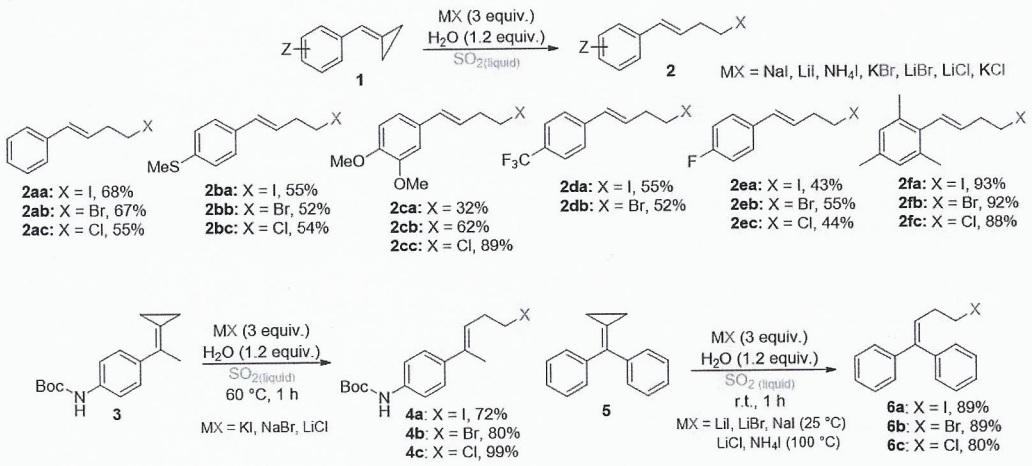
Methylenecyclopropanes (MCPs) are easily accessible yet highly strained and reactive building blocks.[1] MCP can be readily opened under transition metal or Lewis acid catalyzed conditions.[2] We have hypothesized that a highly polar and Lewis acidic reaction medium could facilitate the ring opening of MCPs with simple nucleophiles. We have recently shown that liquid sulfur dioxide perfectly fulfils the aforementioned solvent requirements.[3] Additionally, it dissolves well inorganic salts.[4] Here we report ring opening of MCPs in liquid SO_2 with I and II group metal halides.

For scope of group I metal catalysts we chose benzylidenecyclopropane **1** as model substrate. From results we found cation activity order: $Li^+ > Mg^{2+} > Cs^+ > K^+ > Na^+ > NH_4^+$ and anion activity order: $I^- > Br^- > Cl^-$. Variously substituted MCP opening products **2a–2f** were obtained in good yields. The developed method is sufficiently mild against acid labile protecting groups and *N*-Boc protected products **4a–c** were obtained in excellent yields.



Supervisor: *Dr. chem. M. Turks*

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