B-Alkylpinacolboranes as Precursors for C-Centered Radicals

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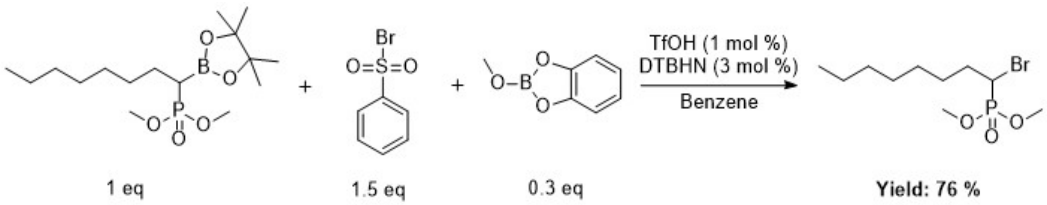
Organoboranes, commercially available or easily prepared via hydroboration of olefins, represent a very attractive source of alkyl radicals [1]. The *B*-alkylpinacolboranes are easy to handle since they are moisture- and air-stable. For instance, they can be readily purified by flash chromatography [2]. The generation of radicals from *B*-alkylpinacolboranes requires formation of ate complex followed by treatment with a strong oxidant [3]. We report here that *B*-alkylpinacolboranes can be used as radical precursors in the absence of oxidizing agent, using *in situ* transesterification process. Highly efficient chain reactions, leading to the products of allylation, bromination as well as hydrogen atom transfer, are reported. Substrate, obtained by hydroboration of unactivated or activated by both EWG or ERG, can be successfully modified by suggested method. Even *α*-chloro, *α*-iodo and *α*-phosphonato radicals provided high yields.



[1] V. Darmency, P. Renaud, *Top. Curr. Chem.* **2006**, *263*, 71-106.
[2] Zhang, D. Peng, X. Leng, Z. Huang, *Angew. Chem. Int. Ed.* **2013**, *52*, 3676 –3680.
[3] R. Larouche-Gauthier, T. Elford, V. Aggarwal, *J. Am. Chem. Soc.* **2011**, *133*, 16794 –16797.