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Transition-Metal Free Mechanochemical Approach to Polyyne Substituted Pyrroles *J. Org. Chem.* **2016**, *81*, 9188–9198.

Mechanochemical Synthesis of Pyrrole- Substituted Polyynes

Significance: The authors present a metal-free, mechanochemical synthesis of polyyne-substituted pyrroles. The structurally demanding hexatriynyl- and octatetraynyl-substituted pyrroles were successfully obtained by simple grinding of 1-haloalkynes, pyrroles, and potassium carbonate. This approach is unprecedented in the synthesis of long polyynes.

SYNFACTS Contributors: Timothy M. Swager, Cagatay Dengiz Synfacts 2016, 12(12), 1245 Published online: 17.11.2016 **DOI:** 10.1055/s-0036-1589673; **Reg-No.:** S11616SF

Comment: The reported synthesis exhibits an effective way to obtain pyrrole-end-capped polyynes. Although coupling reactions of pyrroles with 1-haloalkynes are much more efficient using bromides rather than iodides, 1-iodoalkynes were used for the synthesis of longer polyynes in this work because of the poor stability of longer 1-bromoalkynes. The presented polyynes are promising candidates for molecular wire applications.

Category

Synthesis of Materials and Unnatural Products

Key words

pyrroles

C-H functionalization

alkynes

