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含ケイ素カチオン性複素芳香環化合物の創製研究

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Synthetic study of silicon-containing cationic heteroaromatic compounds ([1]*Institute for Chemical Research, Kyoto University*) Yang Yi,[1] Yoshiyuki Mizuhata,[1] Norihiro Tokitoh[1]

Though silapyridinium analogs in which a skeletal carbon atom of pyridine derivatives is replaced by a silicon atom are rather simple Si-containing heterocycles, there have been no reports so far. There are some stable examples as cation-delocalized species having high-period Group 14 element, but all of them are designed as those bearing bulky substituents according to conventional methods. In this study, we investigated the synthesis of those silapyridinium compounds having small and versatile substituents such as alkyl groups to reveal the effectiveness of cation-cation repulsion to suppress the oligomerization of silicon-containing aromatic compounds. In this presentation, we will report the synthesis of six-membered cyclic precursors having silicon and nitrogen atoms as skeletal elements together with the attempted hydride abstraction at the silicon atom of the products.
Keywords : heteroaromatic compound; silicon; pyridinium

ピリジニウム類縁体の骨格炭素をケイ素に置換した分子群は極めて単純な分子群であるが、これまでに報告例はない。類似の電荷非局在化型の高周期 14 族元素カチオン種はいくつか例はあるものの、従来の安定化手法に則ったかさ高い置換基を有するものに限られている。本研究ではカチオン電荷反発による含ケイ素芳香族化合物の多量化の抑制を指向し、アルキル基等小さくかつ汎用的な置換基を有する分子群の創製を目指す。本発表では、シラピリジニウム環の構築を目的として、ケイ素および窒素を環骨格に含む六員環前駆体の合成およびそれらに対するケイ素上のヒドリド引き抜き反応を検討した結果について報告する。