

High Pressure Synthesis of Metal Ion-Sensing Molecules

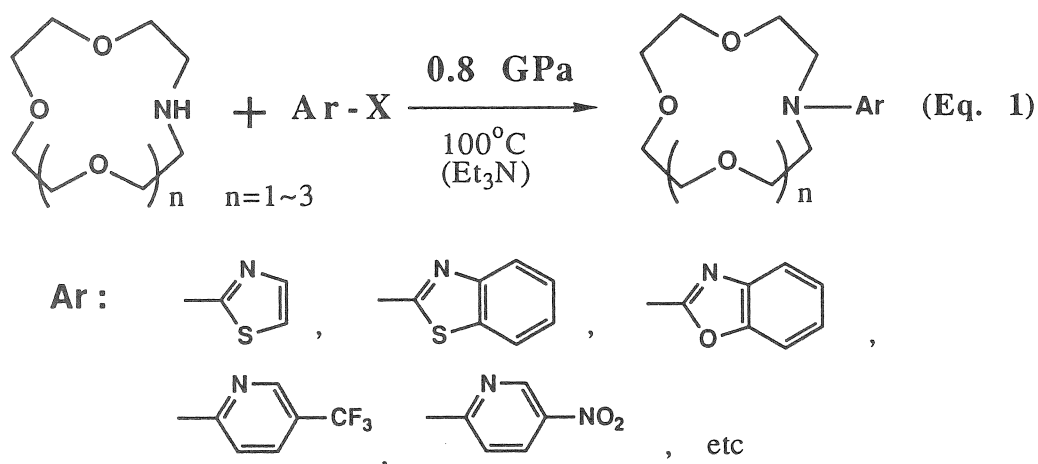
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High pressure S_NAr reaction was successfully applied to the synthesis of a new crown ether family (Eq.1), which incorporated various heteroaromatics as potential cation binding sites in a unique fashion. In a CH_2Cl_2 liquid membrane transport experiment, several aza-crown ethers having thiazole, oxazole, and pyridazine rings exhibited a perfect Ag^+ ion selectivity. ^{13}C NMR binding studies suggested that attachment of characteristic heteroaromatics to the aza-crown ring significantly offered excellent Ag^+ ion specificity. Since the binding and transport selectivities of these armed crown ethers were apparently higher than those with conventional crown ethers, the high pressure technique provided a useful method for synthesis of a new specific host molecule.¹⁾⁻³⁾



1) H. Tsukube, H. Minatogawa, M. Munakata, M. Toda, and K. Matsumoto, *J. Org. Chem.*, **57**, 542 (1992).

2) M. Toda, H. Tsukube, H. Minatogawa, M. Munakata, K. Hirotsu, I. Miyahara, T. Higuchi, K. Matsumoto, *Supramol. Chem.*, in press.

3) H. Tsukube, *Talanta*, in press.