

**BIS-PNP-16-CROWN-6 DERIVATIVES AS ION CARRIERS FOR
Pb(II), Zn(II), AND Cd(II) TRANSPORT ACROSS TRIACETATE
CELLULOSE PLASTICIZED MEMBRANES**

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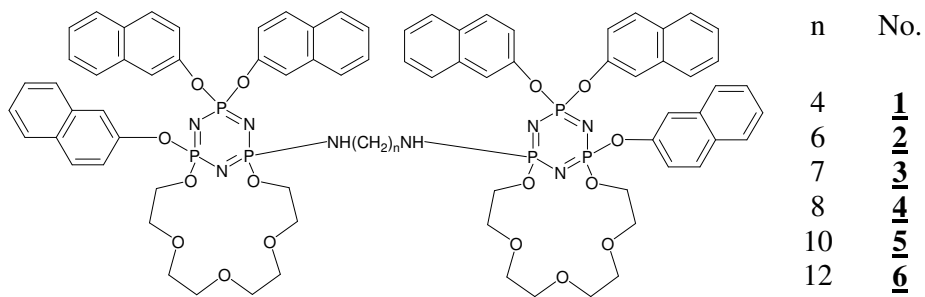
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Macrocyclic compounds such as crown ethers, azacrowns, cryptands, and calixarenes have been well known for selective recognition of specific metal ions [1-3]. Many studies have focused on the determination of the selectivity and efficiency of the carrier-mediated transport of metal ions through organic media into an aqueous receiving phase. In this paper we report a new, highly efficient liquid membrane system containing bis-PNP-16-crown-6 derivatives for the carrier mediated transport of Cd(II) and Zn(II), from chloride and nitrate aqueous solutions.

We prepared of PIMs by physical immobilization: a solution of cellulose triacetate, the ion carrier (1-6), and the plasticizer, o-nitrophenyl pentyl ether in dichloromethane was prepared. The structure of bis-PNP-lariat ethers investigated in the present work is shown in Fig.1 [4]. Investigation of the selective removal of Pb(II), Cd(II) i Zn(II) from aqueous solution using transport across polymer inclusion membranes was studied. The ion carriers, i.e.bis-PNP-lariat ethers derivatives were incorporated into polymer inclusion membranes composed of cellulose triacetate as a support and o-nitrophenyl pentyl ether as a plasticizer. The used bis-PNP-lariat ethers allow to separate metal ions; the selectivity orders were found as follows: Pb(II) > Zn(II) > Cd(II). In the case of diamino-bridged PNP-bis-lariat ether the removal of metal ions was higher at short core. This suggests that formed ion pairs with metal complexes are determined by number of nitrogen atoms in the ring and sidearm of the ligand.



Structures of bis-PNP-lariat ethers

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