

Size- and spatial-tuning of benzo crown ethers for extraction of Cs(I) in aqueous solutions

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Three benzo crown ethers (BCEs) of different cavity sizes and spatial rigidities were synthesized and produced in good yields. Structures of intermediates, BCEs, and post-modifications were confirmed by FTIR and NMR. Preliminary liquid-liquid extraction of Cs (I) showed 46 – 64 mg g⁻¹ by the BCEs, indicating their ability to sequester Cs(I) from aqueous solutions. BCEs covalently attached on mesoporous silica are currently being prepared to produce robust and recyclable adsorbents. This study was supported by NRF funded by The Ministry of Science and ICT (2017R1A2B2002109 and 2020R1A2C1003560), Ministry of Education (2020R1A6A1A03038817), and by KETEP funded by the Ministry of Trade, Industry & Energy (MOTIE No. 20194010201750).

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