

Selective extraction and sensing of alkali metals using crown ether appended anthraquinone fluoroionophore

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Extraction and sensing of alkali metals using novel 14-crown-4 ether derivatives with anthraquinone moiety is reported. The structures of the fluoroionophores synthesized were confirmed by NMR, FTIR, and HRMS analysis. Extraction of alkali metals and subsequent UV-vis absorbance and fluorescence emission studies showed high selectivity towards Li⁺ in the presence of competing alkali metal ions. The fluoroionophore can be applied for the selective extraction as well as determination of Li⁺ in environmental or biological samples. This work was supported by Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Science, ICT and Future Planning (2015R1A2A1A15055407) and by the Ministry of Education (No. 2009-0093816).