

## Supporting Information for

# Polymeric Membrane Electrodes Using Calix[4]pyrrole Bis/Tetra-phosphonate Cavitands as Ionophores for Potentiometric Acetylcholine Sensing with High Selectivity

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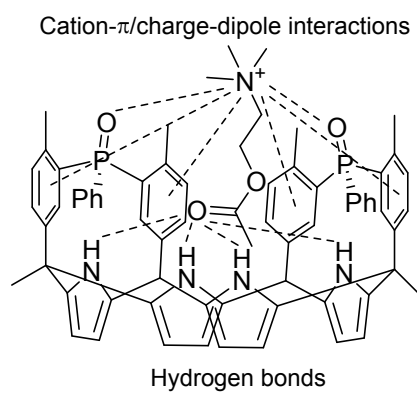
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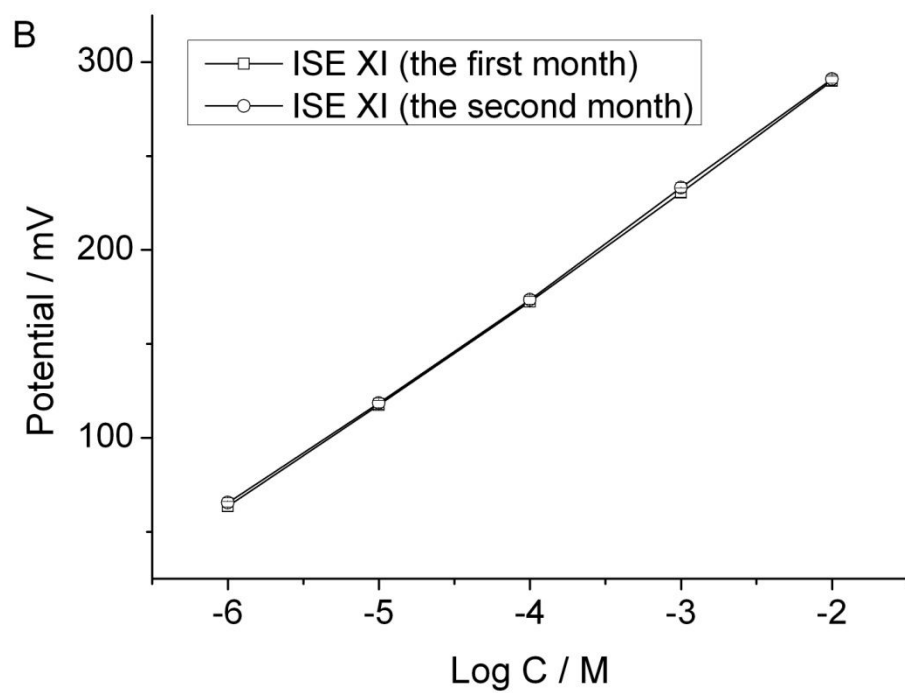
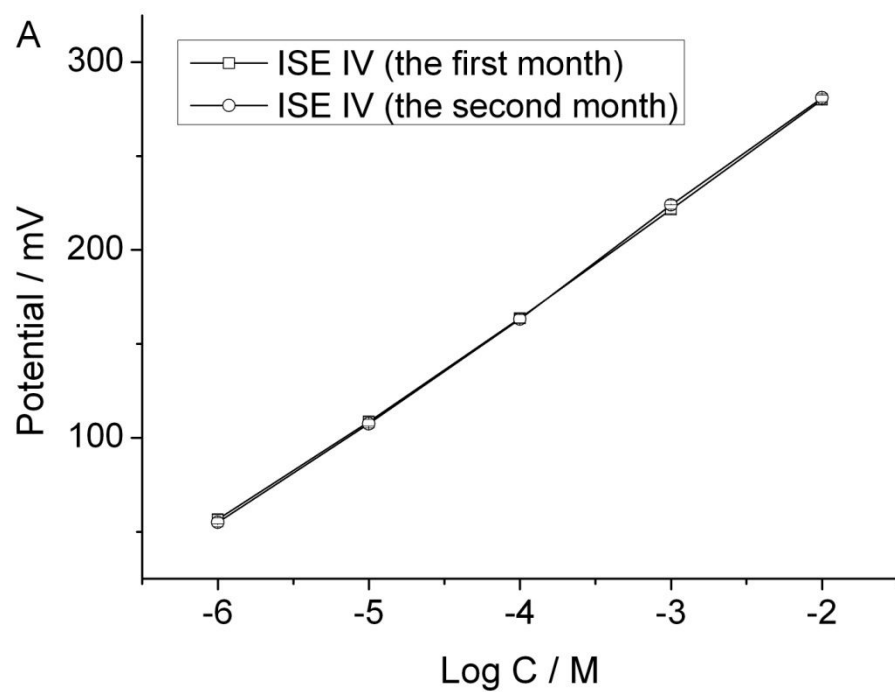
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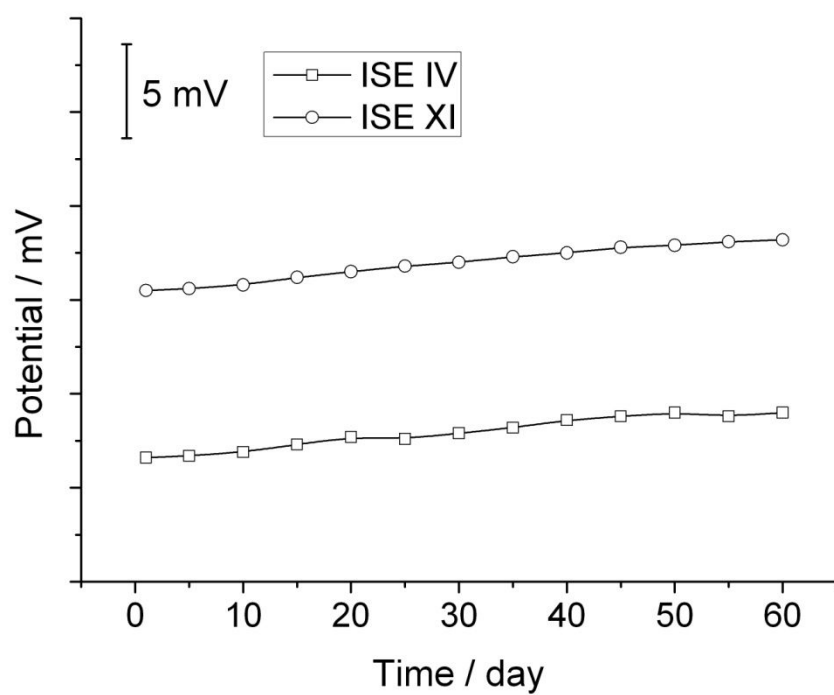
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**Scheme S1.** Binding interactions between  $\text{Ach}^+$  and the ionophores (using ionophore 3ii as an example).



**Figure S1.** Calibration curves for  $\text{Ach}^+$  detection using ISE IV (A) and ISE XI(D) in the first and second month.



**Figure S2.** Potential responses of ISEs IV and XI to  $10^{-3}$  M  $\text{Ach}^+$  in a period of 2 months.