## **Supporting Information for**

## Thin Membrane-Based Potentiometric Sensors for Sensitive Detection of

## Polyions

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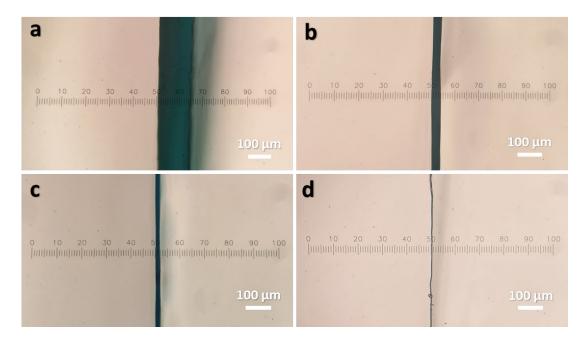


Figure S1. The membranes with different thicknesses observed by using a microscope after the membranes were stained with methylene blue: (a) 150  $\mu$ m, (b) 40  $\mu$ m, (c) 20  $\mu$ m and (d) 5  $\mu$ m.

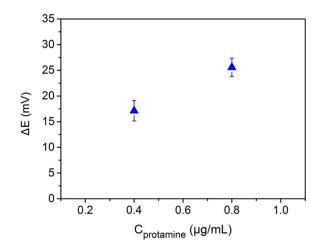


Figure S2. Potential responses of the  $3-\mu m$  membrane PSE to protamine in Tris buffer.

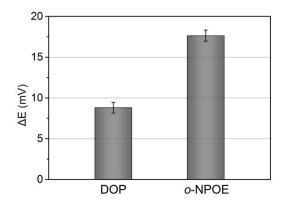


Figure S3. Effect of the plasticizer on the potential response of the thin membrane potentiometric sensor to  $0.8 \ \mu g/mL$  protamine. Each error bar represents one standard deviation for three measurements.

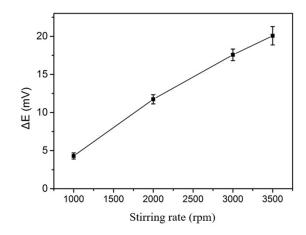
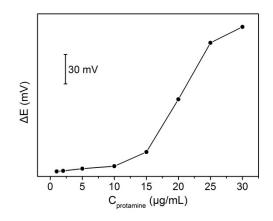


Figure S4. Influence of stirring rate on the potentiometric response of the thin membrane PSE to 0.8  $\mu$ g/mL protamine. Each error bar represents one standard deviation for three measurements.



**Figure S5**. Potential responses of the classical thick-membrane PSE to protamine in Tris buffer. The potential value at 5 min was used for the quantification.