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Supplementary Materials for

Effect of salt on dynamic mechanical behaviors of polyampholyte hydrogels

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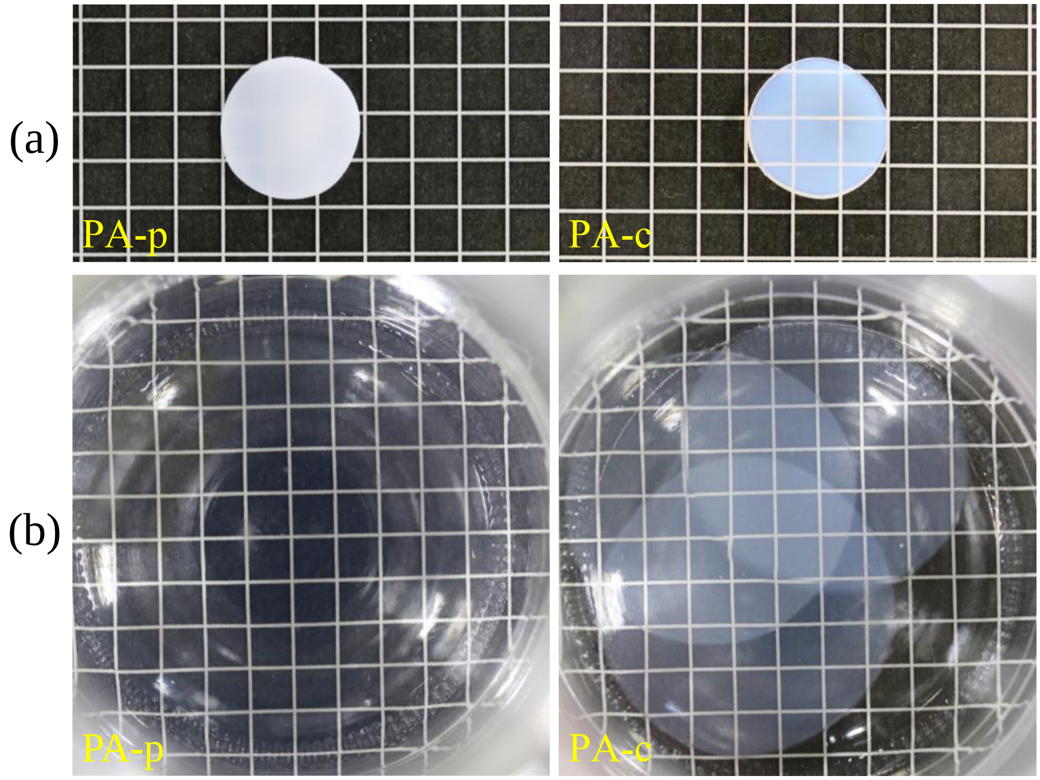

Figure S1. The appearance of equilibrated PA-p and PA-c (**a**) in water, and (**b**) in C_{NaCl} = 4 M solution. For (b), we put three pieces of salt-free PA gels shown in (a) into 4 M NaCl solution. The mesh size of the background lattice is 5 mm. It shows that the PA-p can completely dissolve into 4 M NaCl solution, while the PA-c swells dramatically.

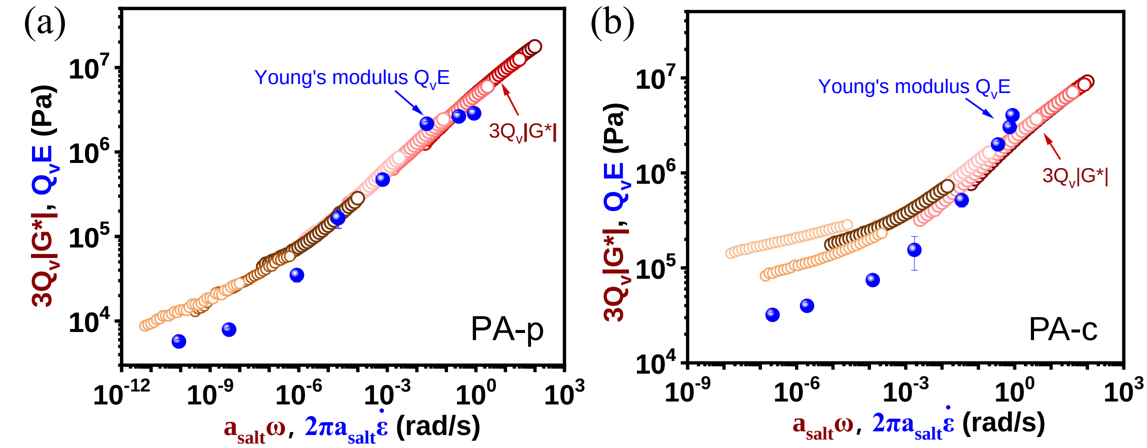

Figure S2. Comparison between the norm of the complex shear modulus $|G^*|$ against $a_{salt}\omega$ from rheology test and the Young's modulus E against $2\pi a_{salt}\dot{\varepsilon}$ from uniaxial tensile test for (**a**) PA-p and (**b**) PA-c. The $|G^*|$ and E are rescaled by volume swelling ratio Q_v to normalize the strand density per unit volume taking the salt-free gels as a reference state. Here, $|G^*| = (G'^2+G''^2)^{0.5}$, where G' *and* G'' are storage modulus and loss modulus, respectively. The relation $E=3|G^*|$ for incompressible material is adopted. The Q_vE vs. $2\pi a_{salt}\dot{\varepsilon}$ curve overlap with its counterpart $3Q_v|G^*|$ vs $a_{salt}\omega$ curve, indicating that the tensile strain rate $\dot{\varepsilon}$ is correlated to the angular frequency ω by $\omega=2\pi\dot{\varepsilon}$.