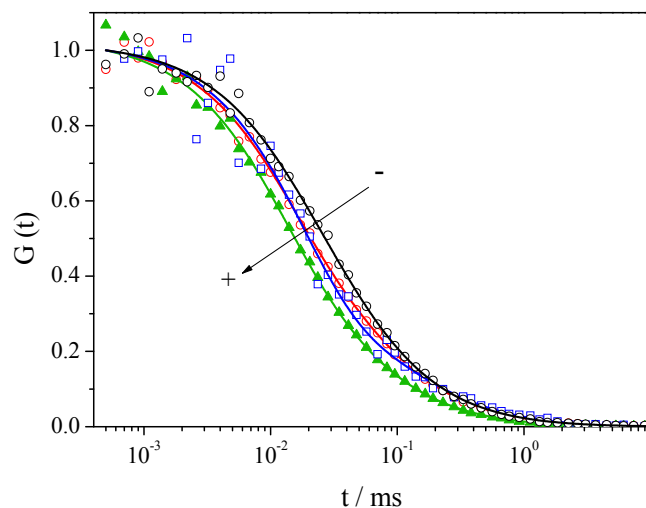


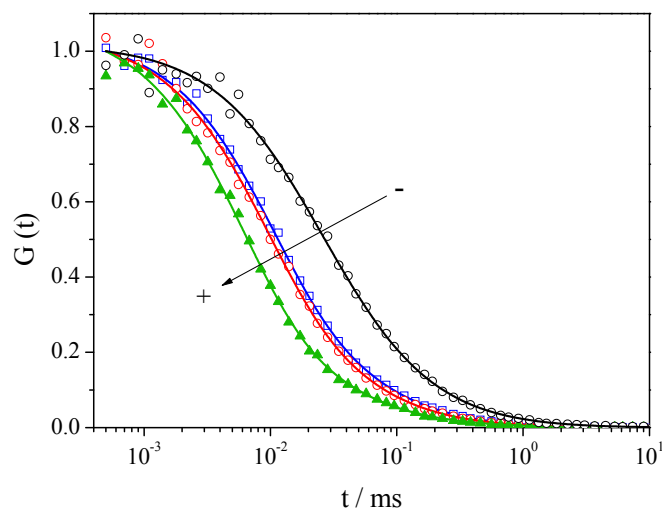
Electronic Supplementary Information for  
**Effect of the Anion Salt Nature on the Rate Constants of the  
Aqueous Proton Exchange Reactions**

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Alvarez-Pez\*

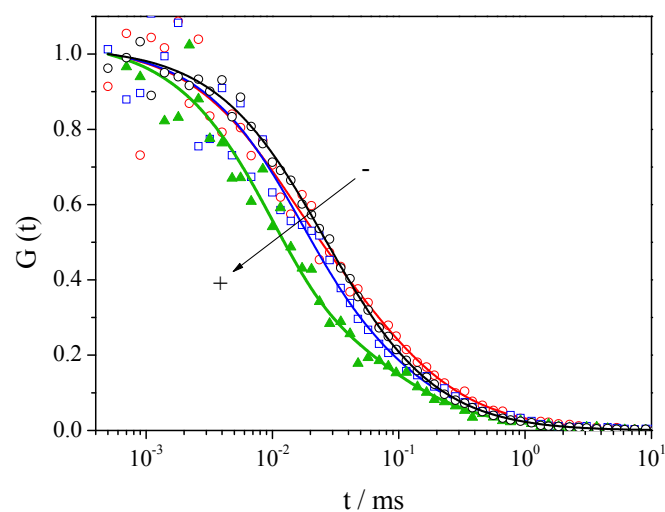
Figure S1	S2
Figure S2	S2
Figure S3	S3
Figure S4	S3
Figure S5	S4
Figure S6	S4
Scheme S1	S5



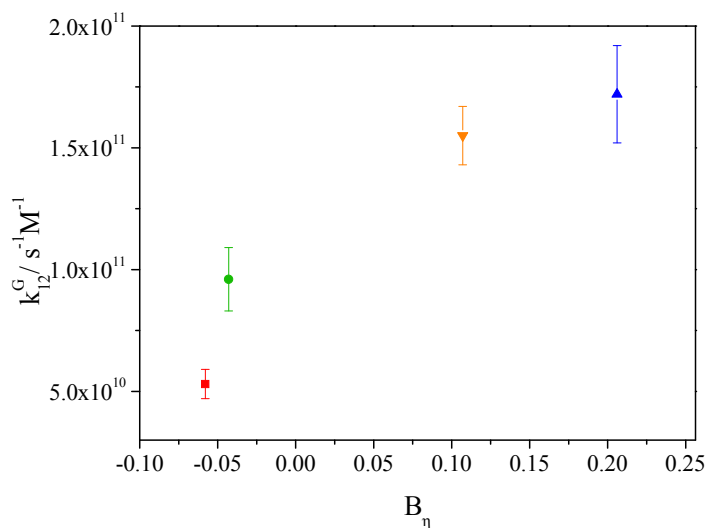
**Figure S1.** Normalized FLCS curves of TG-II anion at pH 6.10 in the presence of sodium perchlorate  $10^{-4}$  M ( $\square$ ),  $10^{-3}$  M ( $\circ$ ), and  $10^{-2}$  M ( $\blacktriangle$ ). The arrow indicates the increment of  $\text{NaClO}_4$  concentration. The FLCS curve of TG-II anion in the absence of salt and pH 9.50 ( $\circ$ ) is also included for comparison. The lines represent the best fits to equation (1).



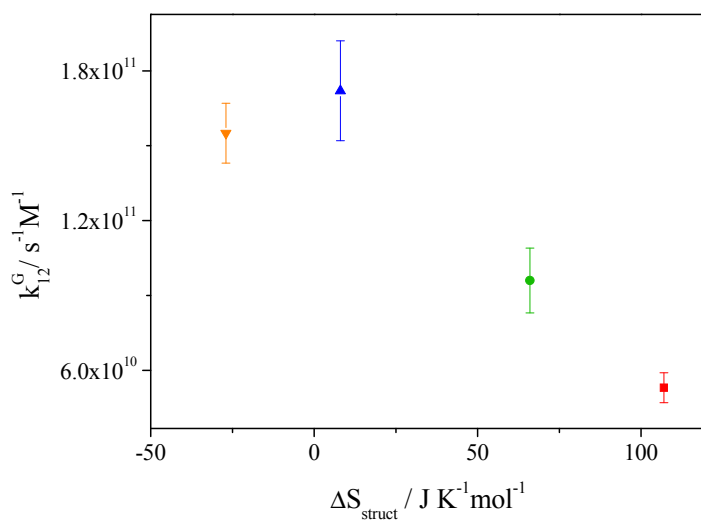
**Figure S2.** Normalized FLCS curves of TG-II anion at pH 6.00 in the presence of sodium nitrate  $10^{-4}$  M ( $\square$ ),  $10^{-3}$  M ( $\circ$ ), and  $10^{-2}$  M ( $\blacktriangle$ ). The arrow indicates the increment of  $\text{NaNO}_3$  concentration. The FLCS curve of TG-II anion in the absence of salt and pH 9.50 ( $\circ$ ) is also included for comparison. The lines represent the best fits to equation (1).



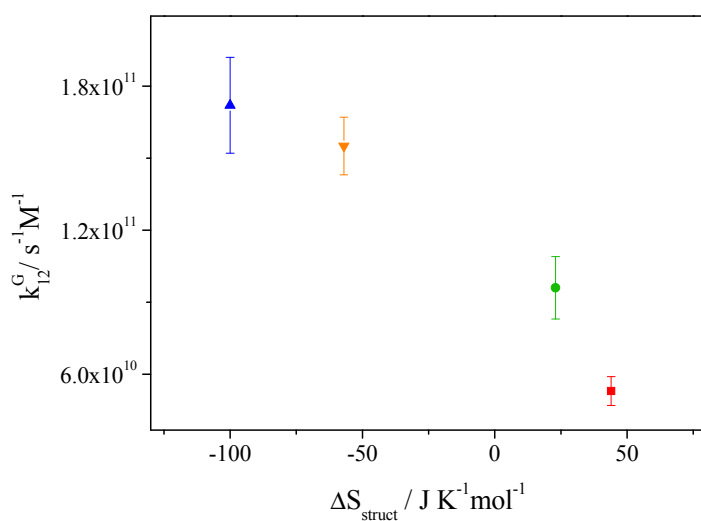
**Figure S3.** Normalized FLCS curves of TG-II anion at pH 6.70 in the presence of sodium hydrogen sulphate  $10^{-4}$  M ( $\square$ ),  $10^{-3}$  M ( $\circ$ ), and  $10^{-2}$  M ( $\blacktriangle$ ). The arrow indicates the increment of  $\text{NaHSO}_4$  concentration. The FLCS curve of TG-II anion in the absence of salt and pH 9.50 ( $\circ$ ) is also included for comparison. The lines represent the best fits to equation (1).



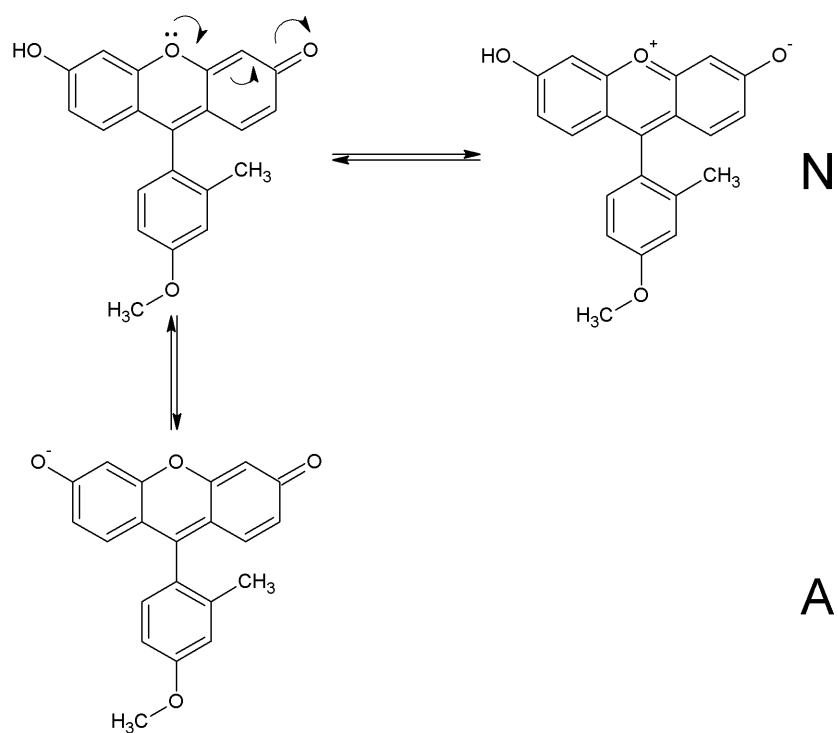
**Figure S4.** Protonation rate constant ( $k_{12}^G$ ) value of ( $\blacksquare$ )  $\text{NaClO}_4$ , ( $\bullet$ )  $\text{NaNO}_3$ , ( $\blacktriangledown$ )  $\text{NaF}$ , and ( $\blacktriangle$ )  $\text{NaHSO}_4$  vs B coefficient of the dynamic viscosity of each electrolyte solution (from reference 19).



**Figure S5.** Protonation rate constant ( $k_{12}^G$ ) value of (■) NaClO<sub>4</sub>, (●) NaNO<sub>3</sub>, (▼) NaF, and (▲) NaHSO<sub>4</sub> vs water structural entropy ( $\Delta S_{\text{struct}}$ ) obtained according to treatments of Marcus (from reference 19).



**Figure S6.** Protonation rate constant ( $k_{12}^G$ ) value of (■) NaClO<sub>4</sub>, (●) NaNO<sub>3</sub>, (▼) NaF, and (▲) NaHSO<sub>4</sub> vs water structural entropy ( $\Delta S_{\text{struct}}$ ) obtained according to treatments of Krestov (from reference 19).



**Scheme S1.** Chemical structures and ground-state proton exchange reaction of TG-II forms at near neutral pH. **N** (neutral) and **A** (anion).