

	GuanH <sup>+</sup>	K <sup>+</sup>	Na <sup>+</sup>	Cl <sup>-</sup>	Max. Diff
$\Delta G_{\text{hyd,elec}}$	-69.6	-85.1	-105.0	-83.4	35.5
$R_{\text{Born}}$	2.36	1.93	1.56	1.97	
$R_{\text{Born-hyd}}$	5.16	4.73	4.36	4.77	
$\Delta G_{\text{part,bare}}(\text{water} \rightarrow \epsilon=1)$	69.6	85.1	105.0	83.4	35.5
$\Delta G_{\text{part,hyd}}(\text{water} \rightarrow \epsilon=1)$	31.8	34.7	37.6	34.4	5.8
$\Delta G_{\text{part,bare}}(\text{water} \rightarrow \epsilon=2)$	34.3	42.0	51.8	41.2	17.5
$\Delta G_{\text{part,hyd}}(\text{water} \rightarrow \epsilon=2)$	15.7	17.1	18.6	17.0	2.9

**Table S3.** Born energy estimates of membrane partitioning of bare and hydrated ions (in kcal/mol). Only electrostatic components,  $\Delta G_{\text{hyd,elec}}$ , of ion hydration free energies from Table S2 were used in these calculations. Born radii,  $R_{\text{Born}}$ , have been estimated from these free energies using Born expression for solvation and a dielectric constant of 78.46 for water. A hydrated radius,  $R_{\text{Born-hyd}}$ , has been approximated as the Born radius plus 2.8 Å. The free energies for bare and hydrated ions partitioning into non-polarizable hydrocarbon ( $\epsilon=1$ ) and polarizable hydrocarbon ( $\epsilon=2$ ) are shown.