Table 1. Properties of the ions of common biological cations.

Ion	Ionic radius (Å)[a]	Hydrated radius (Å)	Ratio of radii	Ionic volume ($Å^3$)	Hydrated volume ($Å^3$)	Ratio of volumes	Coordination number	Water exchange rate[b] (sec^{-1})	Transport number[c]
Na^+	0.95	2.75	2.9	3.6	88.3	24.5	6	8×10^8	7–13
K^+	1.38	2.32	1.7	11.0	52.5	4.8	6–8	10^9	4– 6
Ca^{2+}	0.99	2.95	3.0	4.1	108	26.3	6–8	3×10^8	8–12
Mg^{2+}	0.65	4.76	7.3	1.2	453	394	6	10^5	12–14

[a]Ionic and hydrated radii are taken from ref. (Diebler *et al.* 1969; Eigen 1963).
[b]Solvent exchange rates are taken from ref. (Diebler *et al.* 1969).
[c]The transport number estimates the average number of solvent molecules associated with an ion sufficiently tightly that they migrate through the solution as the cation diffuses. It is a measure of the electrostatic ordering around the cation. The larger the transport number the larger the macromolecular complex that is present and must migrate through the solvent. Values are taken from (Cowan 1995).