

Table 1. Intracellular concentrations, without and with complex formation, of ions making significant contributions to ionic strength in red cells

Species	Concentration (mM) ^a		Contribution to ionic strength (M) ^b	
	Complex formation?		Complex formation?	
	No	Yes	No	Yes
K ^{+c}	155	155	0.078	0.078
Na ^{+d}	20.9	20.9	0.011	0.011
Hb ^{2+e}	4.75	1.94	0.010	0.004
Mg ^{2+f}	3.70	0.48	0.007	0.001
Cl ^{-g}	78	78	0.039	0.039
HCO ₃ ^{-h}	13.5	13.5	0.007	0.007
BPG ⁴⁻ⁱ	9.80	5.35	0.078	0.043
Lactate ^{-j}	3.81	3.81	0.002	0.002
Hb.BPG ^{2-k}	–	2.74	–	0.006
GSH ^{-l}	2.69	2.69	0.001	0.001
Mg.ATP ^{2-m}	–	1.50	–	0.003
Hb.ATP ²⁻ⁿ	–	0.07	–	<0.001
ATP ^{4-o}	1.70	0.13	0.014	0.001
ADP ^{3-p}	0.50	0.50	0.002	0.002
GTP ^{4-q}	0.23	0.23	0.002	0.002
Total			0.251	0.200

^aMillimolar (mmol/litre). ^bMolar (mol/litre). ^cPotassium ion, human, Long (1961). ^dSodium ion, human, Long (1961). ^eHaemoglobin ion, rabbit, Magnani et al. (1984). ^fMagnesium ion, rabbit, Magnani et al. (1984). ^gChloride ion, human, Nikinmaa (1990). ^hBicarbonate, human, Nikinmaa (1990). ⁱBisphosphoglycerate, rabbit, Magnani et al. (1984). ^jLactate, rabbit, Magnani et al. (1984). ^kHaemoglobin-bisphosphoglycerate complex, rabbit, Magnani et al. (1984). ^lGlutathione (reduced), rabbit, Magnani et al. (1984). ^mMagnesium-adenosine triphosphate complex, rabbit, Magnani et al. (1984). ⁿHaemoglobin-adenosine triphosphate complex, rabbit, Magnani et al. (1984). ^oAdenosine triphosphate, rabbit, Magnani et al. (1984). ^pAdenosine diphosphate, rabbit, Magnani et al. (1984). ^qGuanosine triphosphate, rabbit, Magnani et al. (1984).