

Table II. Compartmental ion and sugar concentrations of guard cells of closed and open stomata (in mM)

Data relate to *V. faba* unless noted otherwise. References are as follows: Fischer (1968); Allaway (1973); Raschke et al. (1975); Raschke and Schnabl (1978); Van Kirk and Raschke (1978a, 1978b); MacRobbie (1983b); Clint and Blatt (1989); Talbott and Zeiger (1993, 1996); Thiel et al. (1993); Marschner (1995); Willmer and Fricker (1996); Guo et al. (2003); Dodd et al. (2005, 2007).

Solute	Apoplast		Cytosol		Vacuole	
	Closed	Open	Closed	Open	Closed	Open
K ⁺	0.05–114	0.05–24	55–93	150–247	38–92	181–454
H ⁺ (pH) ^{a,b}	6.2–7.1	4.8–6.5	7.4–7.9	7.2–7.7	5.2–6.5	4.0–5.3
Ca ²⁺ ^c	0.05–1.0	0.5–1.7	0.1–0.9 μM	0.09–0.45 μM	1–5	3–22
Cl ⁻ ^d	0.3–44	0.1–7	3–20	11–50	3–40	40–124
NO ₃ ⁻ ^{a,b}	0.1–0.2	1–0.2	2–5	2–5	10–92	10–92
PO ₄ ²⁻ ^a	0.3–0.7	3–0.7	2–6	2–6	4–92	4–92
Mal ^d	0.5–20	0.4–3.5	0.1–6	2–25	5–48	41–464
Suc	0.4–3	1–8	12–20	6–75	1–27	45–200

^aValues are typical for glycophytic plants. ^bValues incorporate data from *Commelina communis* and *Arabidopsis* guard cells. ^cCytosol values are free concentrations. ^dCl⁻ will exchange with Mal, subject to availability.

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