

TABLE 2.3

Permeability Coefficients for Various Compounds Crossing Membranes of a Range of Cell Types<sup>a</sup>

Permeant	Permeability coefficients			
	<i>Chara ceratophylla</i> (algal plant cell)	Human red blood cell	Urinary bladder (toad)	Artificial lipid bilayers
Water	$6.6 \times 10^{-4}$	$1.2 \times 10^{-3}$	$1.1 \times 10^{-4}$	$2.2 \times 10^{-3}$
Formamide	$2.2 \times 10^{-5}$	$1.1 \times 10^{-6}$		$1.0 \times 10^{-4}$
Butyramide	$5.0 \times 10^{-5}$	$1.1 \times 10^{-6}$	$5.0 \times 10^{-6}$	
Urea	$1.1 \times 10^{-6}$	$7.7 \times 10^{-7}$	$1.0 \times 10^{-6}$	$4.0 \times 10^{-6}$
Thiourea	$2.0 \times 10^{-6}$	$1.1 \times 10^{-6}$		
Ethanol	$1.6 \times 10^{-4}$	$2.1 \times 10^{-3}$	$1.0 \times 10^{-4}$	
Ethenediol	$1.1 \times 10^{-5}$	$2.9 \times 10^{-5}$	$8.2 \times 10^{-7}$	$8.8 \times 10^{-5}$
Glycerol	$2.0 \times 10^{-7}$	$1.6 \times 10^{-7}$		$5.4 \times 10^{-6}$
Erythritol		$6.7 \times 10^{-9}$		

<sup>a</sup> Permeabilities in  $\text{cm sec}^{-1}$ , and determined at 25°C.

The data for *Chara* are from R. Collander and H. Bärlund (1933) *Acta Bot. Fenn.* **11**, 1–114; for human red blood cells from various authors as tabulated by W. R. Lieb and W. D. Stein; in W. D. Stein (1986) "Transport and Diffusion across Cell Membranes" Academic Press, Orlando; for toad urinary bladder from N. Bindslev and E. M. Wright (1976), *J. Membr. Biol.* **81**, 159–170; and those for artificial lipid bilayers from E. Orbach and A. Finkelstein (1980) *J. Gen. Physiol.* **66**, 251–265.