

TABLE 1. *Microelectrode data obtained in intact cell nuclei of various species*

V_{NE} , mV	R_{NE} , $\Omega \cdot \text{cm}^2$	G_{NE} , $\text{S} \cdot \text{cm}^{-2}$	G_{pore} , pS	$\varnothing_{\text{pore}}$, nm	\varnothing_{nuc} , μm	Pores, μm^{-2}	A_{NE} , μm^2	Pores/Nucleus	Cell Type	Condition	Reference No.
-13	1.5	0.7	200	3.2 (1.5)	30	40	2,827	113,080	Salivary gland	In situ	92
≈ 0	<0.2	>5.8	>1,000	>6.0 (3.0)	80	58	20,106	1,166,148	Oocyte	In situ	77
-13	1.5	0.7	200	3.2 (1.4)	30	40	2,827	113,080	Salivary gland	In situ	94
-15	1.0	1.0	286	3.8 (1.7)	30	40	2,827	113,080	Salivary gland	In situ	93
-2 to -5	0.7 ^a	1.4	428	4.0 (1.8)	30	40	2,827	113,080	Salivary gland	In situ	71
-2 to -5	1.4 ^b	0.7	214	2.8 (1.3)	30	40	2,827	113,080	Salivary gland	In situ	71
-1.2 to -0.3	2.0	0.5	150	2.3 (1.0)	30	40	2,827	113,080	Salivary gland	In situ	125
-33	ND	ND	ND	ND	12	11	452	4,972	HeLa cells	In situ	47
ND	0.3	3.3	2,100	10.3 (5.2)	9	16	254	4,064	Liver cells	In vitro	135
-10	<8.0	>0.1	>300	>3.9 (1.8)	16	3	804	2,412	Pronucleus	In vitro	106
-4	ND	ND	ND	ND	9	7	254	1,778	MDCK cells	In situ	119
-6	ND	ND	ND	ND	9	7	254	1,778	MDCK cells	In vitro	117
-3	1.4 ^c	0.7	932	7.5 (3.5)	9	7	254	1,778	MDCK cells	In vitro	114
-6	1.0 ^d	1.0	980	7.7 (3.6)	9	10	254	2,540	MDCK cells	In vitro	114
ND	1.7 ^e	0.6	798	6.4 (2.9)	9	7	254	1,778	MDCK cells	In vitro	116
ND	1.1 ^f	0.9	1,198	7.8 (3.6)	9	7	254	1,778	MDCK cells	In vitro	116

^a No ecdysone. ^b 1-5 h of ecdysone. ^c Aldosterone-depleted cells. ^d Aldosterone-supplemented cells. ^e No TATA-binding protein (TBP). ^f 10 Min post-TBP. ND, no data available; V_{NE} , nuclear envelope (NE) potential; R_{NE} , total NE resistance; G_{NE} , total NE conductance; A_{NE} , total nuclear envelope area; G_{pore} , single nuclear pore complex (NPC) conductance, estimated from G_{NE} and NPC density; \varnothing_{nuc} , nuclear diameter; $\varnothing_{\text{pore}}$, electrical pore diameter (d) estimated from the equation $d = 2[(\rho_l G_{\text{pore}})/\pi]^{1/2}$. In this equation ρ is the resistivity of the cytosolic solution (70-100 $\Omega \cdot \text{cm}$ depending on the preparation) and l is the estimated pore length (40 nm based on measurements of the total height of native NPCs with atomic force microscopy). The $\varnothing_{\text{pore}}$ values in parentheses were calculated for a pore length of 10 nm, assuming that the central part of the nuclear pore channel has only the length of the thickness of a double lipid bilayer, whereas the channel entrances at both sides of the nuclear pore complex were assumed to be wide and, thus, were electrically neglected. [Nuclear pore density was taken from the indicated papers or from Maul (104).]