J. Membrane Biol. 80, 271 (1984)

The Journal of
Membrane Biology

Errata

S.G. Schultz, S.M. Thompson, R. Hudson, S.R. Thomas, and Y. Suzuki

The Journal of Membrane Biology **79**:257–269 (1984)

It has come to our attention that the initial boundary condition for the integration of Eq. (A3) in the Appendix to our paper is incorrect so that Eq. (A4) should be replaced by

$$\psi^{mc}(t) = [g^s \psi^{ms}/(g^m + g^s)]\,[1 - \exp(-t/\tau)] + [C^s \psi^{ms}/(C^m + C^s)] \exp(-t/\tau) \qquad (A'4)$$

and Eq. (A5) should be replaced by

$$[\psi^{mc}(t)/\psi^{ms}] = f(t) = f[1 - \exp(-t/\tau)] + [C^s/(C^s + C^m)] \exp(-t/\tau). \qquad (A'5)$$

The first terms on the right of Eqs. (A'4) and (A'5) are identical to those in our Appendix; the second terms describe the correct *initial* values of $\psi^{mc}(t)$ and $f(t)$ immediately after, $(t=0)$, passage of sufficient transcellular current to clamp ψ^{ms} from 0 to the new ψ^{ms}.

The time-constant, $\tau = r^m r^s (C^m + C^s)/(r^m + r^s)$ is identical to that given in our Appendix and *must* apply to the time course of capacitative changes across *both* membranes.

It follows that the three arguments in the text (p. 263) that are based on the original Eq. (5) are incorrect. Nonetheless, the other arguments that the time-dependence of E^s and g^s cannot be attributed *entirely* to electrical capacitance appear to be valid.

Thus, the conclusion that the low values of E^s indicate that the basolateral membrane must possess a significant conductances to an ion (or ions) other than K and the argument that E^s must, in time, approach $E^{s'}$ are not compromised by our error.

Finally, it should be noted that Eq. (A'5) offers an approach toward determining the "fractional capacitance" of the cell from rapid voltage-clamp studies.

The authors apologize to the readers for our error.