# Hydroxyl radical activation of a Ca2+-sensitive nonselective cation channel involved in epithelial cell necrosis

Simon, Felipe

Varela, Diego

Eguiguren, Ana Luisa

Díaz, Laín F.

Sala, Francisco

Stutzin, Andrés

In a previous work the involvement of a fenamate-sensitive Ca 2+-activated nonselective cation channel (NSCC) in free radical-induced rat liver cell necrosis was demonstrated (5). Therefore, we studied the effect of radical oxygen species and oxidizing agents on the gating behavior of a NSCC in a liver-derived epithelial cell line (HTC). Single-channel currents were recorded in HTC cells by the excised inside-out configuration of the patch-clamp technique. In this cell line, we characterize a 19-pS Ca 2+-activated, ATP- and fenamate-sensitive NSCC nearly equally permeable to monovalent cations. In the presence of Fe2+, exposure of the intracellular side of NSCC to H2O2 increased their open probability (Po) by ?40% without affecting the unitary conductance. Desferrioxamine as well as the hydroxyl radical (.OH) scavenger MCI-186 inhibited the effect of H2O2, indicating that the increase in Po was mediated by .OH. Exposure of the patch membrane to the oxidizing agent 5,5?-dithio-bis-2-nit