

Effects of flunixin and mefenamic acid on cardiac pacemaker cells.

Structure-activity relationship and comparison with clonixin

Morales,

Salazar,

Paeile,

1. 1. The electrophysiological effects of flunixin and mefenamic acid, non-steroidal analgesics, on frog cardiac pacemaker cells, were studied by intracellular action potential recording. 2. 2. Results show that flunixin (Flx) between 2×10^{-6} and 1×10^{-4} M, exerts a frequency, OS, APA and V_{max} concentration-dependent decrease, similar to the effects of clonixin (Clx) reported elsewhere (Morales et al., Gen. Pharmac. 23, 515-521, 1992). 3. 3. At 2.5×10^{-4} M, Flx induces a complete cessation of the electrical activity of subsidiary pacemaker cells. 4. 4. Mefenamic acid (Mef), in spite of its structural similarity with Clx and Flx, induces no appreciable electrophysiological changes. 5. 5. Flx effects were partially reversed by increasing external calcium concentration and fully antagonized by BAY K-8644, a calcium L-type channel agonist. 6. 6. By comparing the structures of the three fenamates studied, it is suggested that the nitrogen of the heterocycle and the electron-donor capacity