The post-ictal analgesia is one of many kinds of antinociception, in which the involvement of many neural systems has been demonstrated. Some evidences have been showed the involvement of mesencephalic structures in antinociceptive processes. The inferior colliculus is the brainstem structure responsible for the origin and elaboration of convulsive responses (MCCOWN e col, 1987) in the presence of audiogenic stimulus or during the treatment of supralimiar administration of GABAergic antagonists. Mesencephalic structures such as the periaqueductal gray matter, the deep layers of the superior colliculus and the central nucleus of the inferior colliculus, have been implicated in convulsive processes (DE PAULIS e col., 1990; CARDOSO e col., 1994, MCCOWN e col., 1984). The stimulation of these areas, in whose neural substrates there are β-endorphin- and leu-enkephalin-positive neurons (EICHENBERGER e col., 2002; OSAKI e col., 2003) can generate antinociceptive processes (CASTILHO e col., 1999; GEBHART & TOLEIKIS, 1978), of either opioid (NICHOLS e col., 1989) or monoaminergic (COIMBRA e col., 1992; COIMBRA & BRANDÃO, 1997) nature.

The aim of the present work is to investigate the involvement of the µ₁-opioid receptor-mediated system in the post-ictal analgesia. The antinociceptive responses were recorded by the tail-flick test, after the pre-treatment with the specific opioid antagonist naloxonazine, administered either by peripheral (intraperitoneally) or central (into the inferior colliculus neural networks) way, in different doses.

The peripheral long-lasting (24h) but not acute (10 min) pre-treatment with naloxonazine antagonized the analgesia evoked by tonic-clonic convulsions. Such as, the microinjections of naloxonazine in the central, dorsal cortical and external cortical nuclei of inferior colliculus antagonized the analgesia induced by tonic-clonic convulsive reactions, whose effect followed a dose-response curve. Also, the microinjections of naloxonazine
reduced the time of convulsive reactions. These findings suggest the involvement of µ₁-opiate receptors and the neural networks of the inferior colliculus in this antinociceptive phenomenon, and in addition, the involvement of these receptors in the modulation of tonic-clonic convulsive reactions. Thus, we can suggest that the endogenous opioid peptides-mediated systems of the neural networks of the inferior colliculus are implicated in the elaboration of the post-ictal antinociception and in the modulation of tonic-clonic convulsions. In these processes, µ₁-opioid receptors of the central nucleus, as well as of the cortical dorsal and cortical external nuclei of the inferior colliculus are crucially involved.

**Key-words:** naloxonazine, opioid, µ₁-receptors, post-ictal analgesia.