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## Effect of pregabalin on peripheral neuropathy-induced neuronal and microglial activations in rat brain

**Young Bae Kwon**

Chonbuk National University, South Korea

Although pregabalin is an effective drug for treating neuropathic pain, the mechanisms of its analgesic effects in brain is not fully investigated. The aim of the present study was to determine whether pregabalin could modify the activation of Fos and microglia in the specific brain regions including rostroventral medial medulla (RVM), locus coeruleus (LC), periaqueductal gray (PAG) and dorsal raphe (DR). Following repeated administration of pregabalin (10 mg/kg, twice a day) from 12 to 14 day after L5 spinal nerve ligation (SNL) surgery in rats, reduction of mechanical allodynia was evident at 14 day after SNL. At 14 day after SNL, the number of Fos expression as a neuronal activation marker significantly increase in RVM, LC, PAG and DR as compared with non-surgery rats, which were significantly reduced by pregabalin treatment. Furthermore, CD11b which is a marker of microglia activation was increased by SNL in these brain areas, which also reversed by pregabalin. These results illustrated the involvement of the specific brain nuclei accompanying with microglia activation during central processing of neuropathic pain, and the antinociceptive effect of pregabalin might be also mediated by the inhibition of those activations in brain.

### Biography

Young Bae Kwon has his expertise in "Evaluation of novel anti-nociceptive effect and its related mechanism in different animal models including neuropathic pain". He tries to make new animal model for evaluating human like pain modality through understanding anti-nociceptive mechanism of analgesics.

1972y@jbnu.ac.kr

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