Pannexin 1: A novel participant in neuropathic pain signaling in the rat spinal cord

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Pannexin 1 (panx1) is a large-pore membrane channel expressed in many tissues of mammals, including neurons and glial cells. Panx1 channels are highly permeable to calcium and adenosine triphosphatase (ATP); on the other hand, they can be opened by ATP and glutamate, two crucial molecules for acute and chronic pain signaling in the spinal cord dorsal horn, thus suggesting that panx1 could be a key component for the generation of central sensitization during persistent pain. In this study, we examined the effect of three panx1 blockers, namely, 10panx peptide, carbenoxolone, and probenecid, on C-reflex wind-up activity and mechanical nociceptive behavior in a spared nerve injury neuropathic rat model involving sural nerve transection. In addition, the expression of panx1 protein in the dorsal horn of the ipsilateral lumbar spinal cord was measured in sural nerve-transected and sham-ope