

# Neurology: Neurochemistry, Neuropharmacology and Neurosciences

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## Pregabalin enhances myelin repair and attenuates glial activation in lysolecithin-induced demyelination model of rat optic chiasm

Multiple sclerosis (MS) is an **autoimmune disease** in which more than 70% of patients experience visual disturbance as the earliest symptoms. Lysolecithin (LPC)-induced focal demyelination model has been developed to evaluate the effects of different therapies on myelin repair improvement. In this study, the effects of **pregabalin** administration on myelin repair and glial activation were investigated. Local demyelination was induced by administration of LPC(1%, 2 $\mu$ L) into the rat optic chiasm. Rats underwent daily injection of pregabalin (30 mg/kg, i.p) or vehicle. Visual evoked potential (VEPs) recordings were performed for evaluating the function of optic pathway on days 3, 7, 14 and 28 post lesions. Myelin specific staining and immunostaining against GFAP and Iba1 were also carried out for assessment of myelination and glial activation respectively. **Electrophysiological** data indicated that pregabalin administration could significantly reduce the P1-N1 latency and increase the amplitude of VEPs waves compared to saline group. Luxol fast blue staining and immunostaining against PLP, as mature myelin marker, showed that myelin repair was improved in animals received pregabalin treatment. In addition, pregabalin effectively reduced the expression of GFAP and Iba1 as activated glial markers in optic chiasm. The present study indicates that pregabalin administration enhances myelin repair and ameliorates glial activation of optic chiasm following local injection of LPC.

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### Biography

Dr. **Danyal Daneshdoust** completed his medical school at the age of 25 years from Babol university of medical science. He joined research committee of the university from the first year of medical school and published 3 papers during education. In the 3<sup>rd</sup> year of medical school he joined in neuroscience field and worked in lab with rats specially on **multiple sclerosis**. He was invited to the national annual Babol university of medical science conference as scientific editor.

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