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## [Pain suppressive effect of low power laser irradiation. A quantitative analysis of substance P in the rat spinal dorsal root ganglion]

[Article in Japanese]

T Ohno <sup>1</sup>

Affiliations

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### Abstract

The influence of low power laser irradiation on pain was studied by the quantification of substance P in the rat spinal dorsal root ganglion (DRG). Forty-one Sprague-Dawley rats were divided into three groups: control (n = 12), stimulated group (n = 16), and laser application group (laser group) (n = 13). Under pentobarbital anesthesia, the right sciatic nerve of rats was exposed. The sciatic nerve was stimulated electrically in the stimulated group and the laser group. The laser irradiation was continued during the electrical stimulation in the laser group. Immediately after the electrical stimulation with or without the laser application, DRG of the fourth to sixth lumbar spinal roots were excised. Immunohistochemical substance P staining and substance P-like immunoreactivity (SP-LI) quantification were done in the excised DRG. There was a statistically significant difference of SP-LI between the control group (14.9 +/- 5.02 pg/mg tissue) and the stimulated group (20.9 +/- 7.54 pg/mg tissue) (p < 0.05). There was no statistically significant difference between the control and the laser group (16.2 +/- 4.83 pg/mg tissue). These results suggest that the laser irradiation suppresses the excitation of the unmyelinated C-fibers in the afferent sensory pathway.

### Related information

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