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## Different Spinal Effects of Opioid Agonists on Spinal and Spino-Bulbo-Spinal Reflexes in Rats\*

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The effects of morphine-HCl (MOR), methionine-enkephalin (ME) and dynorphin<sub>1-13</sub> (DYN) on spinal and spino-bulbo-spinal (SBS) reflexes were studied. Although spinal intrathecal administration of MOR (15  $\mu$ g) did not produce any apparent effect on these reflexes, systemically administered MOR (3 mg/kg i.v.) reduced the electrical toe stimulation-induced SBS reflex. Furthermore, MOR (3 mg/kg i.v.) increased the polysynaptic reflex induced by electrical stimulation of low-threshold dorsal root afferents in intact (non-spinal) rats, but not in spinal rats. Intrathecally administered DYN (0.5 and 5  $\mu$ g) reduced both the electrical toe stimulation-induced spinal and SBS reflexes, while ME (15  $\mu$ g) only reduced the SBS reflex. These results indicate the physiological multiplicity of spinal opioid receptors. MOR may affect supraspinal nuclei but not the spinal pathway which possesses MOR-sensitive opioid receptors, whereas ME and DYN affect spinal opioid peptide receptors and modulate the reflex activities in which they participate.

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