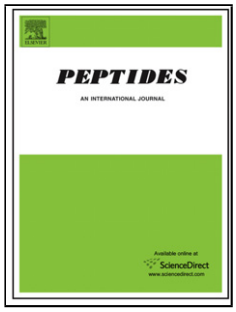

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Distribution of MCH-containing fibers in the feline brainstem: relevance for REM sleep regulation

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Highlights:

- MCH plays a critical role in the control of REM sleep.
- The distribution of MCH+ fibers in the brainstem of the cat was analyzed.
- High density of MCHergic fibers was found in REM sleep controlling areas.
- MCH-IR cells were found in the pontine reticular formation

Abstract

Neurons that utilize melanin-concentrating hormone (MCH) as a neuromodulator are localized in the postero-lateral hypothalamus and incerto-hypothalamic area. These neurons project diffusely throughout the central nervous system and have been implicated in critical physiological processes, such as sleep. Unlike rodents, in the order carnivora as well as in humans, MCH exerts its biological functions through two receptors: MCHR-1 and MCHR-2. Hence, the cat is an optimal animal to model MCHergic functions in humans.

In the present study, we examined the distribution of MCH-positive fibers in the brainstem of the cat. MCHergic axons with distinctive varicosities and *boutons* were