

THE DISTRIBUTION OF APGW-AMIDE AND FMRF-AMIDE IN THE NERVOUS SYSTEM AND REPRODUCTIVE ORGANS OF FASCIOLA GIGANTICA

Naruwan Saowakon^{1,2}, Chaitip Wanichanon², Prasert Sobhon²

¹Institute of Science, Suranaree University of Technology,
Nakhon Ratchasima 30000, Thailand

²Department of Anatomy, Faculty of Science, Mahidol University,
Bangkok 10400, Thailand

E-mail : naruwan@sut.ac.th

KEY WORDS: *Fasciola gigantica*, immunoperoxidase, immunofluorescence.

ABSTRACT

The nervous system of trematode parasites controls locomotion, feeding, egg production and excretion, using neurotransmitters or neuromodulator that may have excitatory or inhibitory effects. The FMRF-amide and APGW-amide are classified in native neuropeptides that control the nervous, reproductive and musculature systems of mollusk and free-living flatworms. In this study, we have demonstrated the presence and distribution of both FMRFamide-like and APGWamide-like peptides in the nervous system and reproductive organs of adult *F.gigantica* using immunohistochemistry. Immunoreactivities of FMRFamide-like peptides (FLP-ir) were detected in the neurosecretory cells at Mehlis's gland and neuroglia in the nervous system, including the parenchymal cells, testes and unembryonic egg. In addition, intense APGWamide-like immunoreactivity (ALP-ir) was also found in the testes, ovary, vitelline glands and neuroglia underneath the muscular layer and surround the suckers. The moderate ALP-ir was detected in the outer layer of neurosecretory cell in Mehlis's gland, except in unembryonic cells. These results of the FMRF-like and APGWamide-like peptides in the neuroglia and neurosecretory cells indicate that these neuropeptides may act as a neurotransmitter which controls muscular contractions and neuromodulator of Mehlis's gland. The intensive FLP and ALP-ir located in the both sexual reproductive organs, vitelline gland and neurosecretory cells. These neuropeptides may be involved with development of gamatogenesis, control the egg chamber contraction and shell formation of parasites.

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