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INFORMATION

Hokkaido University confered the degree of Bachelor of Veterinary Medicine to the following 45 graduates of the School of Veterinary Medicine on March 24, 2000.

The authors summaries of their theses are as follows :

An immunohistochemical study of chromogranin A by use of region-specific antisera in the rat and horse

Hiroyuki Ohki

Laboratory of Anatomy,
Department of Biomedical Sciences,
School of Veterinary Medicine,
Hokkaido University, Sapporo 060-0818, Japan

Chromogranin A (CgA) is an acidic glycoprotein which is co-stored with hormones or neurotransmitters in secretory granules and synaptic vesicles of endocrine cells and neurons, and co-released with them in response to adequate stimulation. In addition to a carrier protein, CgA displays a precursor molecule which is cleaved to several bioactive peptides. However, modes and mechanisms of CgA processing in cells remain unknown. Recently, it was shown that concentration of CgA in the plasma and saliva is elevated in stress conditions, and that CgA becomes a reliable marker of stress conditions. The purpose of this study is to elucidate how different the processing of CgA is in each tissue by immunostaining using four region-specific antisera, and to evaluate the availability of the region-specific antisera.

When various endocrine tissues of rats were immunostained with four kinds of region-specific antisera against rat CgA (CgA 1-28, 94-130, 296-314 and 359-389), all endocrine cells/tissues except the pineal body were stained positively. The adrenal medulla and gastric endocrine cells were intensely stained equally with all four antisera, while the other endocrine tissues, particularly pancreatic islets, showed different staining patterns depending upon antisera used. This result suggested that the processing of CgA is different from tissue to tissue. When the horse endocrine tissues were stained with four antisera against rat CgA, positive reactions were observed with only anti-rat CgA 1-28 serum which can recognize the N-terminal region, highly conserved among mammals.

Since in the rat and human, the region corresponding to horse CgA 335-365 is highly stable in the plasma and urine, this region was selected for production of antisera against horse CgA. This antiserum stained all endocrine tissues of the horse except the pineal body. Therefore, the anti-horse CgA335-365 serum appears to be useful for immunohistochemistry of horse CgA and measurement of plasma CgA level. It is expected that establishment of a CgA assay system using this antiserum becomes possible and that measurement of CgA concentration in the blood and plasma is a way to evaluate stress conditions in the horse.