DEPARTMENT OF CLINICAL CHEMISTRY

NEUROENDOCRINE FACTORS IN HEALTH AND DISEASE

The homeostatic response to internal or external stressful stimuli is largely controlled by neuropeptide family of Corticotropin Releasing Factor (or Hormone) (CRF or CRH) which also includes Urocortin-1 (UCN1), Urocortin-2 (UCN2) and Urocortin-3 (UCN3). CRF and the Urocortins coordinate homeostatic mechanisms to stress at the level of Central Nervous System (CNS) and in the periphery (paracrine homeostatic mechanisms). Downstream of CRF, the homeostatic machinery is also composed of other neuropeptides, cytokines and adipokines which may affect target organs via the systemic circulation (hormonal effects), the peripheral nervous system (neural response) and locally via the paracrine homeostatic loops. Recently, adipokines have emerged as major components of the homeostatic mechanisms. Adipokines derive from adipose tissue, the largest endocrine gland in the body. Among a multitude of other biological effects, recent evidence suggests that adipokines are also important effectors of innate immunity regulating the inflammatory response. Adiponectin is an adipokine produced exclusively from adipocytes and its concentration in the plasma is reversely associated with obesity. Adiponectin has been hailed as a major anti-inflammatory agent.

RESEARCH

Our department is focusing on the study of the role of the CRF family of neuropeptides, downstream neuropeptides and that of adipokines in: a) adrenal function and intra-glandular homeostasis, b) the immune system and inflammation, c) skin physiology and wound healing, d) pain perception, and e) cell proliferation / differentiation and tumor physiology.

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