

Chapter 48

PACAP as a Potential Biomarker: Alterations of PACAP Levels in Human Physiological and Pathological Conditions

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Abstract Pituitary adenylate cyclase activating polypeptide (PACAP) is a neuropeptide with wide distribution and diverse effects. Its presence has not only been revealed in the nervous system and peripheral organs, but also in the blood and other biological fluids. Although PACAP is rapidly cleaved in the blood by peptidases, increasing number of evidence has been published in the last 10 years that show alterations of PACAP levels in different pathological conditions. The present review summarizes results obtained in the human blood and other fluids under normal, physiological and pathological conditions with clinical relevance, such as pregnancy and delivery, as well as in several diseases. Most clinical data have been obtained so far in neurological diseases, such as Alzheimer's disease, migraine, traumatic brain injury, multiple sclerosis, and cerebral hemorrhage, but some other diseases have also been shown to be accompanied by alterations of PACAP levels. These results indicate that the altered levels may have diagnostic and/or prognostic values in several diseases.

Keywords Serum • Plasma • RIA • ELISA • Biomarker • Neuropeptide

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