Abstract
All living organisms are constantly challenged by a diversity of exogenous (environmental, psychological, social) and endogenous stimuli or stressors, which induce general or local biological responses to protect or adapt the organism to the stressor(s). The systemic biological response of the organism to exogenous stressors (or classical stress response) includes activation of the hypothalamic-pituitary-adrenal axis and release of hypothalamic corticotropin-releasing hormone (CRH) that activates pituitary CRH receptors (CRH-R) followed by the production and release of proopiomelanocortin-derived peptides and adrenal hormones. Systemic stress response also includes the modulation of the autonomic nervous and immune systems: neuroendocrine hormones and neurotransmitters influence the function of the immune system that reciprocally regulate CNS functions through cytokine release.