

Abstract

Circadian system is a part of all living organisms. It controls suitable timing of their physiological functions and behaviour. The molecular mechanism of interlocking transcription-translational feedback loops of clock genes and their protein products forms the core of the circadian system. The main structures of this system in mammalian organisms are suprachiasmatic nuclei of the hypothalamus. Memory is also closely connected with circadian system. It is one of the most important abilities of organism for creating knowledge. Both memory and circadian system enable to the organism to adapt to changes in its external environment. The expression of clock genes was detected in brain structures involved in mediation of memory such as hippocampus, amygdale and basal ganglia. The oscillations of these clock genes influence the formation and retrieval of memory traces. The aim of this work is to summarize current knowledge about the relationship between the memory and the circadian system.

Key words: circadian system, memory, clock genes, suprachiasmatic nuclei, hippocampus