

第26回 最先端脳科学セミナー

Genetic identification of the REM/non-REM sleep center

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要旨

Our sleep is composed of two distinct states, REM (rapid eye movement) sleep and non-REM sleep. REM sleep is the major source of dreams, whereas non-REM sleep is characterized by a synchronous brain activity called slow waves. Little is known, however, about the individual roles and neural substrates of these two states. While classical physiological studies suggest a crucial role for the brainstem, the heterogeneity and complexity of the brainstem has hampered identification of the critical neurons. Here, we developed a mouse genetics method to functionally classify neurons according to their embryonic origin. Using this method, we identified neurons that robustly regulate transitions between REM and non-REM sleep. We further developed our findings to establish a mouse model in which we can precisely induce or inhibit REM sleep. Based on analyses of our mouse model, we propose that REM sleep is involved in sleep quality control.

Reference

Hayashi et al., *Science* 350:957-961, 2015

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