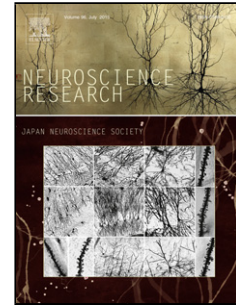


Accepted Manuscript

Title: Promising techniques to illuminate neuromodulatory control of the cerebral cortex in sleeping and waking states

Authors: Takeshi Kanda, Kaoru Ohyama, Hiroki Muramoto, Nami Kitajima, Hiroshi Sekiya



PII: S0168-0102(17)30114-1
DOI: <http://dx.doi.org/doi:10.1016/j.neures.2017.04.009>
Reference: NSR 4040

To appear in: *Neuroscience Research*

Received date: 23-2-2017
Revised date: 27-3-2017
Accepted date: 5-4-2017

Please cite this article as: Kanda, Takeshi, Ohyama, Kaoru, Muramoto, Hiroki, Kitajima, Nami, Sekiya, Hiroshi, Promising techniques to illuminate neuromodulatory control of the cerebral cortex in sleeping and waking states. *Neuroscience Research* <http://dx.doi.org/10.1016/j.neures.2017.04.009>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Promising techniques to illuminate neuromodulatory control of the cerebral cortex in sleeping and waking states

Takeshi Kanda^{a, 1,*}, Kaoru Ohyama^{a, 1}, Hiroki Muramoto^a, Nami Kitajima^b, and Hiroshi Sekiya^{b,*}

^a *International Institute for Integrative Sleep Medicine, University of Tsukuba, Ibaraki 305-8575, Japan*

^b *Department of Pharmacology, Graduate School of Medicine, The University of Tokyo, Bunkyo, Tokyo 113-0033, Japan.*

¹ These authors equally contributed to this work.

* Corresponding author

E-mail address: kanda.takeshi.fu@u.tsukuba.ac.jp (T. Kanda), k_sekiya@m.u-tokyo.ac.jp (H. Sekiya)

45 pages, 4 figures, and 1 table.

Highlights

We review sleep/wake states of the cerebral cortex with a focus on neuromodulators.

Electrophysiological techniques have begun to decipher internal brain states.

Electrophysiology is unable to fully resolve the behavior of neuromodulators.

Fluorescence imaging is a prospective method useful in sleep research.

ABSTRACT

Sleep, a common event in daily life, has clear benefits for brain function, but what goes on in the brain when we sleep remains unclear. Sleep was long regarded as a silent state of the brain because the brain seemingly lacks interaction with the surroundings during sleep. Since the discovery of electrical activities in the brain at rest, electrophysiological methods have revealed novel concepts in sleep

Download English Version:

<https://daneshyari.com/en/article/5738990>

Download Persian Version:

<https://daneshyari.com/article/5738990>

[Daneshyari.com](https://daneshyari.com)