Sushil Jha, Pharmaceut Reg Affairs 2012, 1:4
http://dx.doi.org/10.4172/2167-7689.S1.002

OMICS Group Conferences
Accelerating Scientific Discovery

2nd International Conference and Exhibition on
Pharmaceutical Regulatory Affairs

November 23-24, 2012 Hyderabad International Convention Centre, India

Does sleeping brain help consolidate associative conditioned memory in the rat?

Sushil Jha
Jawaharlal Nehru University, India

Several studies suggest that sleep helps in the consolidation of certain memories but its role in the consolidation of trace and delay conditioned memories is not clearly known. Using the trace and delay conditioning paradigms in rats, we have found that consolidation of these memories is sleep-dependent as sleep deprivation impairs the consolidation of these memories. Further, it is believed that various sleep stages, possibly in part, provide an optimal condition to the brain for a range of distinct memory consolidation processes. For example, proficient learning of visual texture discrimination task augments total sleep, while the motor sequence task and motor adaptation task increase NREM sleep only. It is not known, however, if the change in sleep architecture after learning is a memory consolidation dependent phenomenon. Our data suggest that the altered sleep architecture after learning is indeed a memory consolidation dependent mechanism. The alteration in sleep architecture during the encoding of memory seems to be an essential procedural demand to fulfill the memory consolidation phenomenon. Additionally, we have reported that sleep potentiates in-vivo cortical synaptic plasticity by augmenting the neuronal firing rates, suggesting that it plays an instructive role for synaptic plasticity, which could be an underlying mechanism of memory consolidation.

Biography

Jha completed his doctorate in neuroscience from Hamdard University, New Delhi, India in 2001. After his Ph.D., he moved to USA and worked with Dr. Adrian Morrison and Dr. Marcos Frank as a Postdoctoral fellow from 2001 to 2007. Thereafter, he joined at School of Life Sciences, Jawaharlal Nehru University, New Delhi as an Assistant Professor in Neurobiology and since then continuing there. He is investigating the role of sleep in memory consolidation, synaptic plasticity and brain development. He has published more than 25 papers in national and international journals. He is also the recipient of several awards such as Scopus Young Scientist Award, India 2007; Young Investigator Award, USA, 2006; Faculty Development Award, USA, 2005, Trainee Merit Based Travel Award, USA, 2004; B. K. Anand Research Award, India, 2001.

sushilkjha@mail.jnu.ac.in