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A descriptive analysis of the hypocretin cell transplantation diminishing narcoleptic-like sleep disturbances in rats

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Narcolepsy is a sleep disorder characterized by excessive daytime sleepiness, sleep fragmentation, and cataplexy. This disturbance is related with hypocretin (HCRT) system disruption either deficient ligand or dysfunction in HCRT receptors. Studies in experimental narcolepsy models include the genetic KO mice and the dog that lacks the receptor or the ligand. Our group has reported the development of a different experimental model. The injection into lateral hypothalamus (LH) of the neurotoxin named hypocretin-2-saporin (HCRT2/SAP) destroys the HCRT neurons and diminishes the contents of the peptide in the cerebrospinal fluid (CSF) and induces narcoleptic-like behaviour in rats as assessed by EEG/EMG means. Then, if HCRT2/SAP destroys HCRT neurons and leads to narcolepsy, then it is imperative to evaluate whether grafting HCRT neurons into LH of lesioned rats would revert the sleep abnormalities. Here we report that transplantation of HCRT neurons into LH of HCRT2/SAP lesioned rats improved the sleep alterations.

Biography

Eric Murillo-Rodríguez completed his Ph.D at the age of 28 years from Universidad Nacional Autónoma de México (UNAM). Dr. Murillo-Rodríguez was postdoctoral fellow at Harvard University School of Medicine from 2001-2004. He was Associate Researcher at Prof. Rene Drucker-Colín's lab at UNAM (2005-2007). Dr. Murillo-Rodríguez was holding a Full Professor Appointment at Universidad Autónoma de Campeche (Mexico) from 2007-2009 and currently; he is Full Professor at Universidad Anáhuac Mayab in Merida, Yucatán (Mexico).

Dr. Murillo Rodríguez is part of the review board of journals such as Journal of Neurology, The International Journal of Neuropsychopharmacology, among others. His scientific production includes more than 30 articles published in peer-reviewed scientific journals, 10 chapters in books and numerous participations in domestic and international conferences. Additionally, he is member of several scientific societies, including Society for Neuroscience and Sleep Research Society. Finally, Dr. Murillo Rodríguez has received academic awards, including the Young Investigator Award given by the World Federation of Sleep Research Societies and the Sleep Research Society. He is a member of the National System of Researchers in Mexico (Level 1).