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## **EDUCATION**

1992-1996            The Scripps Research Institute, La Jolla, CA  
1991                 Ph.D. Molecular Biology. University of Barcelona. Spain  
1987                 B.Sc. Biology. University of Barcelona. Spain.

## **RESEARCH POSITIONS**

2006-                Associate Professor. (University Tenure Line) Department of  
Psychiatry and Behavioral Sciences. Stanford University.  
2004-06             Associate Professor. Departments of Molecular Biology and  
Neuropharmacology. The Scripps Research Institute. La Jolla,  
California  
1996-04             Assistant Professor. Department of Molecular Biology. The  
Scripps Research Institute La Jolla, California  
1994-96             Senior Research Associate. Department of Molecular Biology.  
The Scripps Research Institute La Jolla, California  
1992-94             Post-doctoral fellow. Molecular Neurobiology. The Scripps  
Research Institute. La Jolla, California.  
1991-92             Research Associate. Neurobiology. Dept. of Biochemistry and  
Physiology. Faculty of Biology. University of Barcelona

## **PUBLICATIONS**

**(>6,800 citations (Aug 2010); h-index:35)**

- 1.- Graña, X., **de Lecea, L.**, El Maghrabi, R., Ureña, J.M., Caelles, C., Carreras, J., Puigdomènech, P., Pilakis, S., Climent, F.(1992) "Cloning and sequencing of a cDNA encoding 2,3 bisphosphoglycerate-independent phosphoglycerate mutase from maize" *J. Biol. Chem.* 267: 12797-12803
- 2.- Ureña, J.M., Graña, X., **de Lecea, L.**, Ruiz, P., Castellà, J., Carreras, J., Pons, G., Climent, F. (1992) "Isolation and sequencing of a cDNA encoding a B isozyme of rat phosphoglycerate mutase" *Gene* 113: 281-282
- 3.- Soriano, E., del Rio, J.A., Ferrer, I., Auladell, C.,**de Lecea, L.**, Alcántara, S. (1992) "Late appearance of parvalbumin-immunoreactive neurons in the rodent cerebral cortex does not follow an inside-out sequence". *Neurosci. Lett.* 142: 147-150
- 4.- Erlander, M.G., Lovenberg, T.W., Baron, B.M., **de Lecea, L.**, Danielson, P.E., Racke, M., Slone, A.L., Foye, P.E., Cannon, K., Burns, J.E., Sutcliffe J.G (1993) "Two members of a distinct subfamily of 5HT receptors differentially expressed in rat brain" *Proc. Natl. Acad. Sci. USA* 90:3452-3456
- 5.- Lovenberg, T.W., Baron, B.M., **de Lecea, L.**, Miller, J.D., Prosser, R.A., Rea, M.A., Foye, P.E., Racke M., Slone A.L., Siegel, B.W., Danielson, P.E., Sutcliffe, J.G., Erlander, M.E. (1993) "A novel adenylyl cyclase-activating serotonin receptor (5HT7) implicated in the regulation of mammalian circadian rhythms" *Neuron* 11:449-458
6. Erlander M.G., Lovenberg, T.W., Baron, B.M., **de Lecea, L.**, Sutcliffe, J.G. (1993) "Molecular approach to hypothalamic rhythms: isolation of novel indoleamine receptor genes" *J. Biol. Rhythms* 8 (Suppl.):25-31
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8. Usui, H., Falk, J., Dopazo, A., **de Lecea, L.**, Erlander M.G., Sutcliffe. J.G. (1994) "Isolation of clones of rat striatum-specific mRNAs by directional tag PCR subtraction" *J. Neurosci.* 14(8):4915-4926
9. Danielson, P.E., Forss-Petter, S., Battenberg, E.L.F., **deLecea, L.**, Bloom, F.E., Sutcliffe, J.G. (1994). "Four structurally distinct neuron specific glycoproteins produced by differential promoter utilization and alternative mRNA splicing from a single gene". *J. Neurosci. Res.* 38:468-478
10. del Rio, J.A., **de Lecea, L.**, Ferrer, I., Soriano, E. (1994) "The development of parvalbumin immunoreactivity in the neocortex of the mouse". *Dev. Brain Res.*, 81:247-259

11. **de Lecea, L.**, Soriano, E., Criado, JC, Steffensen, S.J., Henriksen, S.J., Sutcliffe, J.G. (1994) "Transcripts encoding a neural membrane CD26-like protein are stimulated by synaptic activity". *Mol. Brain Res.* 25: 286-296
12. Watson, J.B., Coulter III, Margulies, J.E., **de Lecea, L.**, Danielson, P.E., Erlander, M.G., Sutcliffe, J.G. (1994) "G-protein  $\gamma_7$  subunit is highly enriched in medium-sized neurons of the rat neostriatum" *J. Neurosci. Res.* 39:108-116
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17. Morales M, Battenberg ELF, **de Lecea L**, Sanna PP, Bloom FE (1996) "Cellular and subcellular immunolocalization of the type 3 serotonin receptor in the rat central nervous system" *Mol. Brain Res* .36:251-260
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21. **de Lecea, L.**, Sutcliffe, J.G. (1996) "Peptides, sleep and cortistatin". *Mol. Psychiatry* 1:349-351

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28. Alcántara S, Ruiz M, D'Arcangelo G, Ezan F, **de Lecea L.**, Curran T, Sotelo C, Soriano E. (1998) "Regional and cellular patterns of *reelin* mRNA expression in the forebrain of the developing and adult mouse". *J. Neurosci.* 18(19):7779-99
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34. **de Lecea, L.** and Sutcliffe, J.G. (1999) "The hypocretins (orexins): novel neuropeptides that modulate multiple physiological systems (Review)" *Cell. Mol. Life Sci.*56:473-480
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43. Sutcliffe JG and **de Lecea, L** (2000) "The hypocretins: excitatory neuromodulatory peptides for multiple homeostasis systems, including sleep and feeding". *J. Neurosci. Res* 62(2):161-168.

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54. Sutcliffe, J.G. and **de Lecea, L**. (2002) "The hypocretins: setting the arousal threshold". *Nat. Neurosci. Reviews* May;3(5):339-49
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102. Plaza-Zabala A, Martín-García E, **de Lecea L**, Maldonado R, Berrendero F (2010) Hypocretins regulate the anxiogenic-like effects of nicotine and induce reinstatement of nicotine-seeking behavior *J. Neurosci* 30:2300-10
103. Bonnavion P, **de Lecea L** (2010) Hypocretins in the Control of Sleep and Wakefulness *Current Neurology And Neuroscience Reports* 10:174-179
104. Pujadas L, Gruart A, Bosch C, Delgado L Teixeira CM, Rossi D, **de Lecea L** Martinez A, Delgado-Garcia JM, Soriano E (2010) Reelin Regulates Postnatal Neurogenesis and Enhances Spine Hypertrophy and Long-Term Potentiation. *J Neurosci* 30: 4636-4649

105. **de Lecea L** (2010) A decade of hypocretins: past, present and future of the neurobiology of arousal. *Acta Physiologica* 198: 203-208

106. Carter ME, Yizhar O, Chikahisa S, Nguyen H, Adamantidis A, Nishino S, Deisseroth K, **de Lecea L** (2010) "Tuning arousal with optogenetic modulation of locus coeruleus neurons" *Nature Neurosci* (in press).

## **BOOKS**

**L de Lecea** and J.G. Sutcliffe The hypocretins :integrators of physiological functions. 2005. Springer. NY.

### **RECENT INVITED LECTURES (from over 90)**

"Cortistatin and the hypocretins: Peptides in control of sleep" University of Dusseldorf. Department of Physiology. February 2003

- "Molecular basis of sleep" Department of Neuroendocrinology. University of Lille. March 2003

- "Molecular basis of sleep and wakefulness" Oregon Regional Primate Center OHSU, Beaverton, OR. April 2003

- "New targets for sleep and wakefulness" BIO 2003 Biotechnology meeting. Washington, D.C. June 2003

- "Peptides in control of sleep" Department of Psychiatry and Behavioral sciences. Stanford, CA. July 2003

- "Peptidos, vigilia y sueno" Spanish Society for Neuroscience. Lleida (Spain) September 2003.

- "Hypocretins and drug addiction" American College of Neuropsychopharmacology. Puerto Rico. December 2003

- "Cortistatin in the CNS" European Neuroendocrinology Association. Sorrento (Italy). April 2004

- "Neuropeptides in control of arousal" Keynote lecturer. European Neuropeptide Society. Alicante (Spain) May 2004

- "Neuropeptides in control of sleep and wakefulness" Department of Pharmacology. Temple University. Philadelphia PA. May 2004

- "Neuropeptides in control of sleep and wakefulness" Department of Pharmacology. Department of Pharmacology. Drexel University. Philadelphia, PA June 2004

- "Neuropeptides in control of sleep and wakefulness" Department of Pharmacology. Farber Institute for Neurosciences. Jefferson University. Philadelphia, PA June 2004

- "Cortistatin's role in cortical activity" Centre Paul Broca. Paris. June 2004

- "Discovery and history of the hypocretin system" International Symposium on Narcolepsy. Locarno. Switzerland. October 2004

- "Peptidos en control del sueno y vigilia" Centro de Biologia Molecular. Madrid. January 2005

- "Hypocretins: arousal and addiction" University of Geneva. Switzerland March 2005

- "Hypocretins: arousal and addiction" University of Lausanne. March 2005

- “Hypocretins: arousal and beyond” The hypocretins/orexins. EU sponsored meeting. Koln. Germany. July 2005.
- “The hypocretins in addiction and arousal” Spanish Society for Neuroscience. Malaga September 2005
- “Cortistatin: discovery and characterization in the CNS” International Novartis Workshop on Somatostatin. Torino. September 2005
- “Molecular Biology of sleep and wakefulness” Department of Molecular Biology retreat TSRI. La Costa, CA. November 2005
- “Peptides in control of arousal and memory” Cantoblanco Workshops on Biology. Madrid. December 2005
- “An update on hypocretins as arousal stabilizers” Sleep center. Stanford University. May 2006
- “Neuropeptides in arousal and addiction” The Neuroscience Institute at Stanford Research Conference. Asilomar May 2006
- “Molecular Biology of Sleep” Dept. of Pharmacology. U. Texas San Antonio Medical Center. San Antonio, TX. May 2006
- “The hypocretins in arousal and addiction” NIDA Workshop. Bethesda, MD May 2006
- “The hypocretins in arousal and addiction” Frontiers in Addiction Research. NIDA Mini-convention. Atlanta, GA October 2006
- “Addiction and arousal: alternative roles of hypothalamic peptides” Chair. Mini-symposium. Society for Neuroscience. Atlanta, GA. October 2006.
- IGBMC Strasbourg (France), December 2006
- “Cortistatin” NIDA- Intramural Research, Baltimore. January 2007
- “Attention and memory in narcolepsy” Dept of Psychology, Stanford University, January 2007
- “The hypocretins and sleep” The Science Network Broadcast “Waking up to sleep”. The Salk Institute. February 2007
- Dept. of Psychiatry Univ. of Pennsylvania. Philadelphia, PA. March 2007
- Gallo Center. UCSF. Emeryville, CA April 2007
- “The hypocretins: integrators of physiological functions” .Obesity and metabolism. Tihany Hungary April 2007
- “Cortistatin in the CNS” European Congress of Endocrinology. Budapest April 2007
- “Hypocretins: arousal and beyond” Course on Drug Discovery in Neuropsychiatry. Jackson Laboratories. Bar Harbor ME June 2007
- “Arousal and addiction: the hypocretin connection” Research Society of Alcoholism Annual Meeting. Chicago IL July 2007
- “Hypocretins: arousal and beyond” ESBRA meeting. Berlin September 2007
- “Hypocretins (orexins): arousal and beyond” Neurobiology of Disease Workshop. Society for Neuroscience. San Diego, November 2007
- “Sex, drugs and Hypocretins” Centre de Regulacio Genomica Barcelona, Spain. November 2007
- “Hypocretins: Role in arousal and addiction” ACNP. Boca Raton FL. December 2007
- “Optogenetic control of arousal” Dept. of comp Anatomy. Yale University School of Medicine. New Haven CT February 2008
- “Optogenetic control of arousal” Keystone Symposia. Genetics and Biochemistry of Sleep. Granlibakken, CA. March 2008

- “ Cortistatin and hypocretins: peptides in control of cortical activity” University of Cordoba. March 2008
- “The hypocretins in control of sleep and addiction” Biomedical Research Institute, Madrid March 2008
- “The Biological basis of sleep” Dept. of Pharmacology. Vanderbilt University. Memphis, TN April 2008
- “The hypocretin system in sleep apnea” XII Hot Topics on Sleep Apnea. Lleida May 2008
- “Optogenetic control of arousal” Dept. of Neuroscience. University of Pennsylvania. Philadelphia.PA May 2008
- “Optogenetic control of arousal” Dept. of Pharmacology. University of California, Irvine CA May 2008
- “Optogenetic control of arousal” The Burnham Institute. La Jolla CA June 2008
- “ Discovery of the hypocretins “ The hypocretins/orexins International Symposium. Oulu (Finland) August 2008
- European Neuropsychopharmacology Conference. Barcelona (Spain) Sept 2008
- “ Sex, drugs and hypocretins”. Dep of Psychiatry. Yale University, New Haven CT. Sept 2008
- “ Optogenetic control of arousal” NHSN Annual Conference. Bethesda MD. October 2008
- Plenary lecture. 50 years of paradoxical sleep. Lyon (France) January 2009
- 6<sup>th</sup> International symposium on Narcolepsy. Monte Verita. Ascona Switzerland Sept 2009
- Neuropeptides conference. Elsevier. Chicago. October 2009
- Janelia Conference on Hypothalamic circuits. HHMI. Janelia Farm, VA. November 2009
- Winter brain conference. Breckenridge CO January 2010
- Stanford Sleep Center Symposium. Stanford, CA. February 2010
- Meeting of the Minds international congress on Alzheimer’s disease. Monaco. February 2010
- Distinguished Lecture on Drug Addiction. University of Arkansas Medical Center. Little Rock, AR. March 2010
- Optogenetic control of brain reward. Dept of Pharmacology. Wake Forest University. NC. March 2010
- College on Problems of Drug Dependence. Phoenix AZ June 2010
- ISGIDAR Keynote Speaker Phoenix AZ June 2010
- Society for Behavioral Neuroendocrinology. Keynote Lecture. Toronto July 2010
- Society for the Study of Ingestive Behavior. Pittsburgh July 2010
- Biocircuits Institute. UCSD. La Jolla CA. September 2010
- Arrowhead Workshop on Sleep. Invited Lecture. Sept 2010
- Janelia Conference on Genetic Manipulation of Neuronal Activity. Janelia Farm, VA. November 2010
- Society for Neuroscience Symposium. November 2010
- 49<sup>th</sup> ACNP Annual Meeting. December 2010
- International Symposium on Neuroscience. Third Military Medical University. Chongqing, China. December 2010

## **HONORS and AWARDS**

Member. **Board of Scientific Counselors**. National Institute of Drug Abuse (2006-2011)

Ad hoc reviewer Board of Scientific Counselors. National Institute of Mental Health (2009)

Faculty of 1000. Integrative Physiology (2008-)

Ad hoc reviewer Natural Sciences and Engineering Research Council of Canada

Swiss National Foundation

Reviewer. European Research Council (2009-2013).

Member American College of Neuropsychopharmacology (2006-)

Member Editorial Board: *Brain Research*. Section: Gene Expression Patterns (2000-2002)

Ad-hoc member: Study section committee for Neurobiology A. Department of Veterans Affairs. (2003- )

Member Spanish National Expert Committee on Biosciences

Consultant: Merck (2010-11); Grupo Ferrer Internacional (2009-11)

*Ad hoc Reviewer: Science, Nature Medicine, Neuron, Nature Reviews Neuroscience, PNAS, Cerebral cortex, Frontiers in Neuroendocrinology, Journal of Neuroscience, European Journal of Neuroscience, JPET, Molecular and Cellular Neuroscience, Molecular Psychiatry, Biological Psychiatry, Neuropsychopharmacology, Pharmacology, Molecular Pharmacology, Biochemistry and Behavior, Journal of Comparative Neurology, Genomics, Journal of Neuroscience Research, Neuroscience Letters, Journal of Neuroendocrinology, The Journal of Clinical Endocrinology & Metabolism, Journal of Neuroimmunology, Brain Research, Endocrinology, Molecular Endocrinology, Endocrine Reviews, Regulatory Peptides, Peptides, Neuropharmacology, Neuroscience, Journal of Applied Physiology, etc*

1990 Gaspar de Portolà Young Scientist Award

1991 CIRIT Short term fellowship

1991-93 CIRIT Long-term Fellowship

1993-94 NATO Post-doctoral Fellowship

## **SOCIETIES**

American College of Neuropsychopharmacology , Society for Neuroscience, American Society of Neuroendocrinology, Sleep Research Society. European Neuropeptide Club.

## **PATENTS**

Cortistatin: Neuropeptides, compositions and methods, L. de Lecea, J. G. Sutcliffe, S.J. Henriksen, G.R. Siggins. US Patent # 6,479,642 (2001)

Cortistatin: nucleic acids that encode these neuropeptides L.de Lecea and J.G. Sutcliffe  
US Patent 6, 074,872

Antibodies to cortistatin: neuropeptides compositions and methods. L de Lecea, JG Sutcliffe SJ Henriksen, GR Siggins. US Patent 6,814,976

Hypothalamus-specific polypeptides J.G. Sutcliffe, K.M. Gautvik, L. de Lecea, F.E. Bloom, P. E. Danielson, T.S. Kilduff, P.E. Foye. US Patent 6,635,479