

# Stanford

---



## Luis de Lecea

Professor of Psychiatry and Behavioral Sciences (Major Laboratories and Clinical and Translational Neurosciences Incubator)

### CONTACT INFORMATION

- **Alternate Contact**

Ayesha Abid

**Email** aabid@stanford.edu

### Bio

---

#### ACADEMIC APPOINTMENTS

- Professor, Psychiatry and Behavioral Sciences
- Member, Bio-X
- Member, Maternal & Child Health Research Institute (MCHRI)

#### HONORS AND AWARDS

- Senior Fulbright Fellow, Fulbright Commission (2015)
- Member, Faculty of 1000 (2008-)
- Outstanding Scientific Achievement Award, Sleep Research Society (2016)
- Member, Board of Scientific Counselors, NIDA (2006-)
- Integrative Behavioral Neuroscience Prize, ACNP (2010)
- Distinguished Investigator Award, NARSAD (2013)

#### PROFESSIONAL EDUCATION

- Postdoc, The Scripps Research Institute , Molecular Neurobiology (1996)
- Ph.D., University of Barcelona , Molecular Biology (1991)
- B.Sc., University of Barcelona , Biology (1987)

#### LINKS

- Lab website: <http://delecea.stanford.edu>

### Research & Scholarship

---

#### CURRENT RESEARCH AND SCHOLARLY INTERESTS

My lab uses molecular, optogenetic, anatomical and behavioral methods to identify and manipulate the neuronal circuits underlying brain arousal, with particular attention to sleep and wakefulness transitions. We are also interested in the changes that occur in neuronal circuits in conditions of hyperarousal such as stress and drug addiction.

## Teaching

---

### COURSES

#### 2018-19

- Sleep and Cancer: BIOS 278 (Win)

### STANFORD ADVISEES

#### Postdoctoral Faculty Sponsor

Chris Angelakos, Wenjie Bian, Kim Jennings, Keith Murphy, Erica Seigneur

#### Postdoctoral Research Mentor

Wenjie Bian, Erica Seigneur

### GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Molecular and Genetic Medicine (Fellowship Program)
- Neurosciences (Phd Program)
- Psychiatry and Behavioral Science (Fellowship Program)

## Publications

---

### PUBLICATIONS

- **VTA dopaminergic neurons regulate ethologically relevant sleep-wake behaviors.** *Nature neuroscience*  
Eban-Rothschild, A., Rothschild, G., Giardino, W. J., Jones, J. R., de Lecea, L.  
2016; 19 (10): 1356-1366
- **Sleep disruption impairs haematopoietic stem cell transplantation in mice** *NATURE COMMUNICATIONS*  
Rolls, A., Pang, W. W., Ibarra, I., Colas, D., Bonnavion, P., Korin, B., Heller, H. C., Weissman, I. L., de Lecea, L.  
2015; 6
- **Antagonistic interplay between hypocretin and leptin in the lateral hypothalamus regulates stress responses** *NATURE COMMUNICATIONS*  
Bonnavion, P., Jackson, A. C., Carter, M. E., de Lecea, L.  
2015; 6
- **Optogenetic disruption of sleep continuity impairs memory consolidation** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Rolls, A., Colas, D., Adamantidis, A., Carter, M., Lanre-Amos, T., Heller, H. C., de Lecea, L.  
2011; 108 (32): 13305-13310
- **Tuning arousal with optogenetic modulation of locus coeruleus neurons** *NATURE NEUROSCIENCE*  
Carter, M. E., Yizhar, O., Chikahisa, S., Nguyen, H., Adamantidis, A., Nishino, S., Deisseroth, K., de Lecea, L.  
2010; 13 (12): 1526-U117
- **Phasic Firing in Dopaminergic Neurons Is Sufficient for Behavioral Conditioning** *SCIENCE*  
Tsai, H., Zhang, F., Adamantidis, A., Stuber, G. D., Bonci, A., de Lecea, L., Deisseroth, K.  
2009; 324 (5930): 1080-1084
- **Neural substrates of awakening probed with optogenetic control of hypocretin neurons** *NATURE*  
Adamantidis, A. R., Zhang, F., Aravanis, A. M., Deisseroth, K., de Lecea, L.  
2007; 450 (7168): 420-U9
- **Hypothalamic circuitry underlying stress-induced insomnia and peripheral immunosuppression** *Science Advances*  
Li, S. B., Borniger, J. C., Yamaguchi, H., Hédou, J., Gaudilliere, B., de Lecea, L.  
2020; 6 (37)

- **Hypocretin/orexin deficiency decreases cocaine abuse liability** *NEUROPHARMACOLOGY*  
Steiner, N., Rossetti, C., Sakurai, T., Yanagisawa, M., de Lecea, L., Magistretti, P. J., Halfon, O., Boutrel, B.  
2018; 133: 395–403
- **Neuronal Mechanisms for Sleep/Wake Regulation and Modulatory Drive** *NEUROPSYCHOPHARMACOLOGY*  
Eban-Rothschild, A., Appelbaum, L., de Lecea, L.  
2018; 43 (5): 937–52
- **In vivo cell type-specific CRISPR knockdown of dopamine beta hydroxylase reduces locus coeruleus evoked wakefulness** *Nature Communications*  
Yamaguchi, H., Hopf, F., Li, S., de Lecea, L.  
2018; 9
- **Hypothalamic Tubermammillary Nucleus Neurons: Electrophysiological Diversity and Essential Role in Arousal Stability** *JOURNAL OF NEUROSCIENCE*  
Fujita, A., Bonnavion, P., Wilson, M. H., Mickelsen, L. E., Bloit, J., de Lecea, L., Jackson, A. C.  
2017; 37 (39): 9574–92
- **To sleep or not to sleep: neuronal and ecological insights.** *Current opinion in neurobiology*  
Eban-Rothschild, A., Giardino, W. J., de Lecea, L.  
2017; 44: 132-138
- **Neuronal substrates for initiation, maintenance, and structural organization of sleep/wake states.** *F1000Research*  
Eban-Rothschild, A., de Lecea, L.  
2017; 6: 212-?
- **Optogenetic Investigation of Arousal Circuits.** *International journal of molecular sciences*  
Tyree, S. M., de Lecea, L.  
2017; 18 (8)
- **Hypocretins and Arousal.** *Current topics in behavioral neurosciences*  
Li, S., Giardino, W. J., de Lecea, L.  
2016
- **Obesity- and gender-dependent role of endogenous somatostatin and cortistatin in the regulation of endocrine and metabolic homeostasis in mice** *SCIENTIFIC REPORTS*  
Luque, R. M., Cordoba-Chacon, J., Pozo-Salas, A. I., Porteiro, B., de Lecea, L., Nogueiras, R., Gahete, M. D., Castano, J. P.  
2016; 6
- **Hubs and spokes of the lateral hypothalamus: cell types, circuits and behaviour** *JOURNAL OF PHYSIOLOGY-LONDON*  
Bonnavion, P., Mickelsen, L. E., Fujita, A., de Lecea, L., Jackson, A. C.  
2016; 594 (22): 6443-6462
- **Fasting modulates GH/IGF-I axis and its regulatory systems in the mammary gland of female mice: Influence of endogenous cortistatin.** *Molecular and cellular endocrinology*  
Villa-Osaba, A., Gahete, M. D., Cordoba-Chacon, J., de Lecea, L., Castaño, J. P., Luque, R. M.  
2016; 434: 14-24
- **In vivo assessment of behavioral recovery and circulatory exchange in the peritoneal parabiosis model** *SCIENTIFIC REPORTS*  
Castellano, J. M., Palner, M., Li, S., Freeman, G. M., Andy Nguyen, A., Shen, B., Stan, T., Mosher, K. I., Chin, F. T., de Lecea, L., Luo, J., Wyss-Coray, T.  
2016; 6
- **Cortistatin Is a Key Factor Regulating the Sex-Dependent Response of the GH and Stress Axes to Fasting in Mice** *ENDOCRINOLOGY*  
Cordoba-Chacon, J., Gahete, M. D., Pozo-Salas, A. I., de Lecea, L., Castano, J. P., Luque, R. M.  
2016; 157 (7): 2810-2823
- **Superficial Layer-Specific Histaminergic Modulation of Medial Entorhinal Cortex Required for Spatial Learning** *CEREBRAL CORTEX*  
He, C., Luo, F., Chen, X., Chen, F., Li, C., Ren, S., Qiao, Q., Zhang, J., de Lecea, L., Gao, D., Hu, Z.  
2016; 26 (4): 1590-1608
- **Not So Giants: Mice Lacking Both Somatostatin and Cortistatin Have High GH Levels but Show No Changes in Growth Rate or IGF-1 Levels** *ENDOCRINOLOGY*

- Pedraza-Arevalo, S., Cordoba-Chacon, J., Pozo-Salas, A. I., Lopez, F. L., De Lecea, L., Gahete, M. D., Castano, J. P., Luque, R. M.  
2015; 156 (6): 1958-1964
- **Obesity Alters Gene Expression for GH/IGF-I Axis in Mouse Mammary Fat Pads: Differential Role of Cortistatin and Somatostatin** *PLOS ONE*  
Villa-Osaba, A., Gahete, M. D., Cordoba-Chacon, J., de Lecea, L., Pozo-Salas, A. I., Javier Delgado-Lista, F., Alvarez-Benito, M., Lopez-Miranda, J., Luque, R. M., Castano, J. P.  
2015; 10 (3)
  - **The Hypocretin/Orexin System: An Increasingly Important Role in Neuropsychiatry** *MEDICINAL RESEARCH REVIEWS*  
Chen, Q., de Lecea, L., Hu, Z., Gao, D.  
2015; 35 (1): 152-197
  - **Optogenetics in Freely Moving Mammals: Dopamine and Reward.** *Cold Spring Harbor protocols*  
Zhang, F., Tsai, H., Airan, R. D., Stuber, G. D., Adamantidis, A. R., de Lecea, L., Bonci, A., Deisseroth, K.  
2015; 2015 (8): pdb top086330-?
  - **A Framework for Quantitative Modeling of Neural Circuits Involved in Sleep-to-Wake Transition.** *Frontiers in neurology*  
Sorooshyari, S., Huerta, R., de Lecea, L.  
2015; 6: 32-?
  - **Potential role of orexin and sleep modulation in the pathogenesis of Alzheimer's disease** *JOURNAL OF EXPERIMENTAL MEDICINE*  
Roh, J. H., Jiang, H., Finn, M. B., Stewart, F. R., Mahan, T. E., Cirrito, J. R., Heda, A., Snider, B. J., Li, M., Yanagisawa, M., de Lecea, L., Holtzman, D. M.  
2014; 211 (13): 2487-2496
  - **Hypocretin (orexin) neuromodulation of stress and reward pathways** *CURRENT OPINION IN NEUROBIOLOGY*  
Giardino, W. J., de Lecea, L.  
2014; 29: 103-108
  - **Basal Forebrain Cholinergic Modulation of Sleep Transitions** *SLEEP*  
Irmak, S. O., de Lecea, L.  
2014; 37 (12): 1941-U104
  - **Control of sleep-to-wake transitions via fast amino acid and slow neuropeptide transmission** *NEW JOURNAL OF PHYSICS*  
Mosqueiro, T., de Lecea, L., Huerta, R.  
2014; 16
  - **Light and chemical control of neuronal circuits: possible applications in neurotherapy.** *Expert review of neurotherapeutics*  
Whittle, A. J., Walsh, J., de Lecea, L.  
2014; 14 (9): 1007-1017
  - **Hypocretin (orexin) regulation of sleep-to-wake transitions** *FRONTIERS IN PHARMACOLOGY*  
de Lecea, L., Huerta, R.  
2014; 5
  - **Establishing a fiber-optic-based optical neural interface.** *Cold Spring Harbor protocols*  
Adamantidis, A. R., Zhang, F., de Lecea, L., Deisseroth, K.  
2014; 2014 (8): pdb prot083337-?
  - **The hypocretins/orexins: integrators of multiple physiological functions** *BRITISH JOURNAL OF PHARMACOLOGY*  
Li, J., Hu, Z., de Lecea, L.  
2014; 171 (2): 332-350
  - **Optogenetics: opsins and optical interfaces in neuroscience.** *Cold Spring Harbor protocols*  
Adamantidis, A. R., Zhang, F., de Lecea, L., Deisseroth, K.  
2014; 2014 (8): pdb top083329-?
  - **Sleep to forget: interference of fear memories during sleep.** *Molecular psychiatry*  
Rolls, A., Makam, M., Kroeger, D., Colas, D., De Lecea, L., Heller, H. C.  
2013; 18 (11): 1166-1170

- **Paradoxical Effect of Cortistatin Treatment and Its Deficiency on Experimental Autoimmune Encephalomyelitis** *JOURNAL OF IMMUNOLOGY*  
Souza-Moreira, L., Morell, M., Delgado-Maroto, V., Pedreno, M., Martinez-Escudero, L., Caro, M., O'Valle, F., Luque, R., Gallo, M., de Lecea, L., Castano, J. P., Gonzalez-Rey, E.  
2013; 191 (5): 2144-2154
- **Optogenetics in psychiatric diseases.** *Current opinion in neurobiology*  
Tourino, C., Eban-Rothschild, A., de Lecea, L.  
2013; 23 (3): 430-435
- **Cortistatin Inhibits Migration and Proliferation of Human Vascular Smooth Muscle Cells and Decreases Neointimal Formation on Carotid Artery Ligation** *CIRCULATION RESEARCH*  
Duran-Prado, M., Morell, M., Delgado-Maroto, V., Castano, J. P., Aneiros-Fernandez, J., de Lecea, L., Culler, M. D., Hernandez-Cortes, P., O'Valle, F., Delgado, M.  
2013; 112 (11): 1444-?
- **Functional wiring of hypocretin and LC-NE neurons: implications for arousal** *FRONTIERS IN BEHAVIORAL NEUROSCIENCE*  
Carter, M. E., de Lecea, L., Adamantidis, A.  
2013; 7
- **Hypothalamic Neurotensin Projections Promote Reward by Enhancing Glutamate Transmission in the VTA** *JOURNAL OF NEUROSCIENCE*  
Kempadoo, K. A., Tourino, C., Cho, S. L., Magnani, F., Leininger, G., Stuber, G. D., Zhang, F., Myers, M. G., Deisseroth, K., de Lecea, L., Bonci, A.  
2013; 33 (18): 7618-?
- **Repeated in vivo exposure of cocaine induces long-lasting synaptic plasticity in hypocretin/orexin-producing neurons in the lateral hypothalamus in mice** *JOURNAL OF PHYSIOLOGY-LONDON*  
Rao, Y., Mineur, Y. S., Gan, G., Wang, A. H., Liu, Z., Wu, X., Suyama, S., de Lecea, L., Horvath, T. L., Picciotto, M. R., Gao, X.  
2013; 591 (7): 1951-1966
- **Mechanism for Hypocretin-mediated sleep-to-wake transitions** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Carter, M. E., Brill, J., Bonnavion, P., Huguenard, J. R., Huerta, R., de Lecea, L.  
2012; 109 (39): E2635-E2644
- **Shining Light on Wakefulness and Arousal** *BIOLOGICAL PSYCHIATRY*  
de Lecea, L., Carter, M. E., Adamantidis, A.  
2012; 71 (12): 1046-1052
- **Hypocretins and the neurobiology of sleep-wake mechanisms** *OREXIN/HYPOCRETIN SYSTEM*  
de Lecea, L.  
2012; 198: 15-24
- **Cortistatin Is Not a Somatostatin Analogue but Stimulates Prolactin Release and Inhibits GH and ACTH in a Gender-Dependent Fashion: Potential Role of Ghrelin** *ENDOCRINOLOGY*  
Cordoba-Chacon, J., Gahete, M. D., Pozo-Salas, A. I., Martinez-Fuentes, A. J., de Lecea, L., Gracia-Navarro, F., Kineman, R. D., Castano, J. P., Luque, R. M.  
2011; 152 (12): 4800-4812
- **Plasma levels of neuropeptides and metabolic hormones, and sleepiness in obstructive sleep apnea** *RESPIRATORY MEDICINE*  
Sanchez-de-la-Torre, M., Barcelo, A., Pierola, J., Esquinas, C., de la Pena, M., Duran-Cantolla, J., Capote, F., Masa, J. F., Marin, J. M., Vila, M., Cao, G., Martinez, M., de Lecea, et al  
2011; 105 (12): 1954-1960
- **Activation of Central Orexin/Hypocretin Neurons by Dietary Amino Acids** *NEURON*  
Karnani, M. M., Apergis-Schoute, J., Adamantidis, A., Jensen, L. T., de Lecea, L., Fugger, L., Burdakov, D.  
2011; 72 (4): 616-629
- **Neural Integration of Reward, Arousal, and Feeding: Recruitment of VTA, Lateral Hypothalamus, and Ventral Striatal Neurons** *IUBMB LIFE*  
Gutierrez, R., Kay Lobo, M., Zhang, F., de Lecea, L.  
2011; 63 (10): 824-830
- **Optogenetic Interrogation of Dopaminergic Modulation of the Multiple Phases of Reward-Seeking Behavior** *JOURNAL OF NEUROSCIENCE*  
Adamantidis, A. R., Tsai, H., Boutrel, B., Zhang, F., Stuber, G. D., Budygin, E. A., Tourino, C., Bonci, A., Deisseroth, K., de Lecea, L.

2011; 31 (30): 10829-10835

- **Optogenetic investigation of neural circuits in vivo** *TRENDS IN MOLECULAR MEDICINE*  
Carter, M. E., de Lecea, L.  
2011; 17 (4): 197-206
- **Neuropeptide S facilitates cue-induced relapse to cocaine seeking through activation of the hypothalamic hypocretin system** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Kallupi, M., Cannella, N., Economidou, D., Ubaldi, M., Ruggeri, B., Weiss, F., Massi, M., Marugan, J., Heilig, M., Bonnavion, P., de Lecea, L., Cicciocioppo, R.  
2010; 107 (45): 19567-19572
- **Sleep and metabolism: Role of hypothalamic neuronal circuitry** *BEST PRACTICE & RESEARCH CLINICAL ENDOCRINOLOGY & METABOLISM*  
Rolls, A., Borg, J. S., de Lecea, L.  
2010; 24 (5): 817-828
- **Hypocretins in the Control of Sleep and Wakefulness** *CURRENT NEUROLOGY AND NEUROSCIENCE REPORTS*  
Bonnavion, P., de Lecea, L.  
2010; 10 (3): 174-179
- **Reelin Regulates Postnatal Neurogenesis and Enhances Spine Hypertrophy and Long-Term Potentiation** *JOURNAL OF NEUROSCIENCE*  
Pujadas, L., Gruart, A., Bosch, C., Delgado, L., Teixeira, C. M., Rossi, D., de Lecea, L., Martinez, A., Delgado-Garcia, J. M., Soriano, E.  
2010; 30 (13): 4636-4649
- **A decade of hypocretins: past, present and future of the neurobiology of arousal** *ACTA PHYSIOLOGICA*  
de Lecea, L.  
2010; 198 (3): 203-208
- **The role of hypocretin in driving arousal and goal-oriented behaviors** *BRAIN RESEARCH*  
Boutrel, B., Cannella, N., de Lecea, L.  
2010; 1314: 103-111
- **Hypocretins Regulate the Anxiogenic-Like Effects of Nicotine and Induce Reinstatement of Nicotine-Seeking Behavior** *JOURNAL OF NEUROSCIENCE*  
Plaza-Zabala, A., Martin-Garcia, E., de Lecea, L., Maldonado, R., Berrendero, F.  
2010; 30 (6): 2300-2310
- **Optogenetic interrogation of neural circuits: technology for probing mammalian brain structures** *NATURE PROTOCOLS*  
Zhang, F., Gradinaru, V., Adamantidis, A. R., Durand, R., Airan, R. D., de Lecea, L., Deisseroth, K.  
2010; 5 (3): 439-456
- **Optogenetic deconstruction of sleep-wake circuitry in the brain.** *Frontiers in molecular neuroscience*  
Adamantidis, A., Carter, M. C., de Lecea, L.  
2010; 2: 31-?
- **A role for Melanin-Concentrating Hormone in learning and memory** *PEPTIDES*  
Adamantidis, A., de Lecea, L.  
2009; 30 (11): 2066-2070
- **Sleep Homeostasis Modulates Hypocretin-Mediated Sleep-to-Wake Transitions** *JOURNAL OF NEUROSCIENCE*  
Carter, M. E., Adamantidis, A., Ohtsu, H., Deisseroth, K., de Lecea, L.  
2009; 29 (35): 10939-10949
- **The Hypocretins and their Role in Narcolepsy** *CNS & NEUROLOGICAL DISORDERS-DRUG TARGETS*  
Kroeger, D., de Lecea, L.  
2009; 8 (4): 271-280
- **Neuropeptide S Reinstates Cocaine-Seeking Behavior and Increases Locomotor Activity through Corticotropin-Releasing Factor Receptor 1 in Mice** *JOURNAL OF NEUROSCIENCE*  
Paneda, C., Huitron-Resendiz, S., Frago, L. M., Chowen, J. A., Picetti, R., de Lecea, L., Roberts, A. J.  
2009; 29 (13): 4155-4161
- **The brain hypocretins and their receptors: mediators of allostatic arousal** *CURRENT OPINION IN PHARMACOLOGY*

- Carter, M. E., Borg, J. S., de Lecea, L.  
2009; 9 (1): 39-45
- **The hypocretins as sensors for metabolism and arousal** *JOURNAL OF PHYSIOLOGY-LONDON*  
Adamantidis, A., de Lecea, L.  
2009; 587 (1): 33-40
  - **Sleep and metabolism: shared circuits, new connections** *TRENDS IN ENDOCRINOLOGY AND METABOLISM*  
Adamantidis, A., de Lecea, L.  
2008; 19 (10): 362-370
  - **Optogenetic probing of hypocretin neuronal network** *19th Congress of the European-Sleep-Research-Society*  
Adamantidis, A. R., Zhang, F., Aravanis, A., Deisseroth, K., De Lecea, L.  
WILEY-BLACKWELL.2008: 88-88
  - **Effect of cortistatin on tau phosphorylation at Ser262 site** *JOURNAL OF NEUROSCIENCE RESEARCH*  
Rubio, A., Perez, M., de Lecea, L., Avila, J.  
2008; 86 (11): 2462-2475
  - **Somatostatin, cortistatin and their receptors in health and disease. Foreword.** *Molecular and cellular endocrinology*  
Castaño, J. P., Ghigo, E., Kineman, R. D., de Lecea, L., Malagón, M. M., Vaudry, H.  
2008; 286 (1-2): 1-2
  - **Cortistatin - Functions in the central nervous system** *MOLECULAR AND CELLULAR ENDOCRINOLOGY*  
de Lecea, L.  
2008; 286 (1-2): 88-95
  - **Neuropeptide interactions and REM sleep: A role for Urotensin II?** *1st Meeting of the Japan Branch of the International-Neuropeptide-Society*  
de Lecea, L., Bourgin, P.  
ELSEVIER SCIENCE INC.2008: 845-51
  - **Physiological arousal: a role for hypothalamic systems** *CELLULAR AND MOLECULAR LIFE SCIENCES*  
Adamantidis, A., de Lecea, L.  
2008; 65 (10): 1475-1488
  - **Somatostatin receptor subtype 4 couples to the m-current to regulate seizures** *JOURNAL OF NEUROSCIENCE*  
Qiu, C., Zeyda, T., Johnson, B., Hochgeschwender, U., de Lecea, L., Tallent, M. K.  
2008; 28 (14): 3567-3576
  - **Addiction and arousal: The hypocretin connection** *PHYSIOLOGY & BEHAVIOR*  
Boutrel, B., de Lecea, L.  
2008; 93 (4-5): 947-951
  - **Neural substrates of awakening probed with optogenetic control of hypocretin neurons** *22nd Annual Meeting of the Associated-Professional-Sleep-Societies*  
Adamantidis, A. R., Zhang, F., Aravanis, A., Deisseroth, K., De Lecea, L.  
AMER ACAD SLEEP MEDICINE.2008: A364-A364
  - **Circuit-breakers: optical technologies for probing neural signals and systems** *NATURE REVIEWS NEUROSCIENCE*  
Zhang, F., Aravanis, A. M., Adamantidis, A., de Lecea, L., Deisseroth, K.  
2007; 8 (8): 577-581
  - **Cortistatin promotes and negatively correlates with slow-wave sleep** *EUROPEAN JOURNAL OF NEUROSCIENCE*  
Bourgin, P., Fabre, V., Huitron-Resendiz, S., Henriksen, S. J., Prospero-Garcia, O., Criado, J. R., de Lecea, L.  
2007; 26 (3): 729-738
  - **Cortistatin as a therapeutic target in inflammation** *EXPERT OPINION ON THERAPEUTIC TARGETS*  
Rubio, A., Avila, J., de Lecea, L.  
2007; 11 (1): 1-9
  - **Identification of novel transcripts expressed in hypocretin-containing neurons** *21st Annual Meeting of the American-Professional-Sleep-Societies*  
Bourgin, P., Lin, L., Priest, M., Renier, C., Sakurai, T., De Lecea, L., Mignot, E.

---

AMER ACAD SLEEP MEDICINE.2007: A223-A223

- **Transgenic mice with a reduced core body temperature have an increased life span** *SCIENCE*  
Conti, B., Sanchez-Alavez, M., Winsky-Sommerer, R., Morale, M. C., Lucero, J., Brownell, S., Fabre, V., Huitron-Resendiz, S., Henriksen, S., Zorrilla, E. P., de Lecea, L., Bartfai, T.  
2006; 314 (5800): 825-828
- **Addiction and arousal: Alternative roles of hypothalamic peptides** *JOURNAL OF NEUROSCIENCE*  
de Lecea, L., Jones, B. E., Boutrel, B., Borgland, S. L., Nishino, S., Bubser, M., DiLeone, R.  
2006; 26 (41): 10372-10375
- **Cortistatin: not just another somatostatin analog** *NATURE CLINICAL PRACTICE ENDOCRINOLOGY & METABOLISM*  
de Lecea, L., Castano, J. P.  
2006; 2 (7): 356-357
- **New genes involved in cortical development** *DYSLEXIC BRAIN*  
Burgaya, F., Garcia-Frigolo, C., Andres, R., Viturera, N., Lopez-Domenech, G., De Lecea, L., Soriano, E.  
2006: 143-?
- **Role for hypocretin in mediating stress-induced reinstatement of cocaine-seeking behavior** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Boutrel, B., Kenny, P. J., Specio, S. E., Martin-Fardon, R., Markou, A., Koob, G. F., de Lecea, L.  
2005; 102 (52): 19168-19173
- **Stress and arousal - The corticotrophin-releasing factor/hypocretin circuitry** *MOLECULAR NEUROBIOLOGY*  
Winsky-Sommerer, R., Boutrel, B., de Lecea, L.  
2005; 32 (3): 285-294
- **Cortistatin overexpression in transgenic mice produces deficits in synaptic plasticity and learning** *MOLECULAR AND CELLULAR NEUROSCIENCE*  
Tallent, M. K., Veronique, F., Qiu, C., Calbet, M., Lamp, T., Baratta, M. V., Suzuki, C., Levy, C. L., Siggins, G. R., Henriksen, S. J., Criado, J. R., Roberts, A., de Lecea, et al  
2005; 30 (3): 465-475
- **The hypocretins and sleep** *FEBS JOURNAL*  
de Lecea, L., Sutcliffe, J. G.  
2005; 272 (22): 5675-5688
- **Expression, synaptic localization, and developmental regulation of Ack1/Pyk1, a cytoplasmic tyrosine kinase highly expressed in the developing and adult brain** *JOURNAL OF COMPARATIVE NEUROLOGY*  
Urena, J. M., La Torre, A., Martinez, A., Lowenstein, E., Franco, N., Winsky-Sommerer, R., Fontana, X., Casaroli-Marano, R., Ibanez-Sabio, M. A., Pascual, M., del Rio, J. A., De Lecea, L., Soriano, et al  
2005; 490 (2): 119-132
- **Urotensin II modulates rapid eye movement sleep through activation of brainstem cholinergic neurons** *JOURNAL OF NEUROSCIENCE*  
Huitron-Resendiz, S., Kristensen, M. P., Sanchez-Alavez, M., Clark, S. D., Grupke, S. L., Tyler, C., Suzuki, C., Nothacker, H. P., Civelli, O., Criado, J. R., Henriksen, S. J., Leonard, C. S., de Lecea, et al  
2005; 25 (23): 5465-5474
- **Injection of neuropeptide W into paraventricular nucleus of hypothalamus increases food intake** *AMERICAN JOURNAL OF PHYSIOLOGY-REGULATORY INTEGRATIVE AND COMPARATIVE PHYSIOLOGY*  
Levine, A. S., Winsky-Sommerer, R., Huitron-Resendiz, S., Grace, M. K., De Lecea, L.  
2005; 288 (6): R1727-R1732
- **The corticotropin-releasing factor-hypocretin connection: Implications in stress response and addiction** *DRUG NEWS & PERSPECTIVES*  
Paneda, C., Winsky-Sommerer, R., Boutrel, B., de Lecea, L.  
2005; 18 (4): 250-255
- **Cortistatin radioligand binding in wild-type and somatostatin receptor-deficient mouse brain** *REGULATORY PEPTIDES*  
Spier, A. D., Fabre, V., de Lecea, L.  
2005; 124 (1-3): 179-186



- **Cortistatin: a natural somatostatin analog.** *Journal of endocrinological investigation*  
de Lecea, L.  
2005; 28 (11): 10-14
- **Interaction between the corticotropin-releasing factor system and hypocretins (Orexins): A novel circuit mediating stress response** *JOURNAL OF NEUROSCIENCE*  
Winsky-Sommerer, R., Yamanaka, A., Diano, S., Borok, E., Roberts, A. J., Sakurai, T., Kilduff, T. S., Horvath, T. L., de Lecea, L.  
2004; 24 (50): 11439-11448
- **Overexpression of the human beta-amyloid precursor protein downregulates cortistatin mRNA in PDAPP mice** *BRAIN RESEARCH*  
Winsky-Sommerer, R., Spier, A. D., Fabre, V., De Lecea, L., Criado, J. R.  
2004; 1023 (1): 157-162
- **Chronic morphine treatment alters N-methyl-D-aspartate receptors in freshly isolated neurons from nucleus accumbens** *JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS*  
Martin, G., Guadano-Ferraz, A., Morte, B., Ahmed, S., Koob, G. F., De Lecea, L., Siggins, G. R.  
2004; 311 (1): 265-273
- **Neuropeptide S: A neuropeptide promoting arousal and anxiolytic-like effects** *NEURON*  
Xu, Y. L., Reinscheid, R. K., Huitron-Resendiz, S., Clark, S. D., Wang, Z. W., Lin, S. H., Brucher, F. A., Zeng, J. A., Ly, N. K., Henriksen, S. J., Lecea, L. C., Civelli, O.  
2004; 43 (4): 487-497
- **Distribution of CNT2 and ENT1 transcripts in rat brain: selective decrease of CNT2 mRNA in the cerebral cortex of sleep-deprived rats** *JOURNAL OF NEUROCHEMISTRY*  
Guillen-Gomez, E., Calbet, M., Casado, J., De Lecea, L., Soriano, E., Pastor-Anglada, M., Burgaya, F.  
2004; 90 (4): 883-893
- **Not asleep, not quite awake** *NATURE MEDICINE*  
Sutcliffe, J. G., de Lecea, L.  
2004; 10 (7): 673-674
- **A collection of cDNAs enriched in upper cortical layers of the embryonic mouse brain** *MOLECULAR BRAIN RESEARCH*  
Garcia-Frigola, C., Burgaya, F., Calbet, M., Lopez-Guillenno, G., De Lecea, L., Soriano, E.  
2004; 122 (2): 133-150
- **The role of the hypocretinergic system in the integration of networks that dictate the states of arousal** *DRUG NEWS & PERSPECTIVES*  
Winsky-Sommerer, R., Boutrel, B., De Lecea, L.  
2003; 16 (8): 504-512
- **Glutamatergic transmission in opiate and alcohol dependence** *Conference on Glutamate and Disorders of Cognition and Motivation*  
Siggins, G. R., Martin, G., Roberto, M., Nie, Z. G., Madamba, S., De Lecea, L.  
NEW YORK ACAD SCIENCES.2003: 196-211
- **Targeted disruption of RC3 reveals a calmodulin-based mechanism for regulating metaplasticity in the hippocampus** *JOURNAL OF NEUROSCIENCE*  
Krucker, T., Siggins, G. R., McNamara, R. K., LINDSLEY, K. A., Dao, A., Allison, D. W., De Lecea, L., Lovenberg, T. W., Sutcliffe, J. G., Gerendasy, D. D.  
2002; 22 (13): 5525-5535
- **The hypocretins: Setting the arousal threshold** *NATURE REVIEWS NEUROSCIENCE*  
Sutcliffe, J. G., De Lecea, L.  
2002; 3 (5): 339-349
- **Hypocretins/orexins as integrators of physiological information: lessons from mutant animals** *NEUROPEPTIDES*  
de Lecea, L., Sutcliffe, J. G., Fabre, V.  
2002; 36 (2-3): 85-95
- **Interaction of the hypocretins with neurotransmitters in the nucleus accumbens** *REGULATORY PEPTIDES*  
Martin, G., Fabre, W., Siggins, G. R., de Lecea, L.  
2002; 104 (1-3): 111-117

- **Activation of hypocretin neurons and sleep** *9th International Catecholamine Symposium*  
Fabre, V., Bourgin, P., Sutcliffe, J. G., De Lecea, L.  
KLUWER ACADEMIC/PLENUM PUBL.2002: 385-388
- **Pattern of expression of the tetraspanin Tspan-5 during brain development in the mouse** *MECHANISMS OF DEVELOPMENT*  
Garcia-Frigola, C., Burgaya, F., De Lecea, L., Soriano, E.  
2001; 106 (1-2): 207-212
- **Hypocretin (orexin) in the rat pineal gland: a central transmitter with effects on noradrenaline-induced release of melatonin** *EUROPEAN JOURNAL OF NEUROSCIENCE*  
Mikkelsen, J. D., Hauser, F., deLecea, L., Sutcliffe, J. G., Kilduff, T. S., Calcagni, C., Pevet, P., Simonneaux, V.  
2001; 14 (3): 419-425
- **Mapping of the mRNAs for the hypocretin/orexin and melanin-concentrating hormone receptors: Networks of overlapping peptide systems** *JOURNAL OF COMPARATIVE NEUROLOGY*  
Kilduff, T. S., De Lecea, L.  
2001; 435 (1): 1-5
- **Immunohistochemical localization and biochemical characterization of hypocretin/orexin-related peptides in the central nervous system of the frog *Rana ridibunda*** *JOURNAL OF COMPARATIVE NEUROLOGY*  
Galas, L., Vaudry, H., Braun, B., Van den Pol, A. N., De Lecea, L., Sutcliffe, J. G., Chartrel, N.  
2001; 429 (2): 242-252
- **The hypocretins: Excitatory neuromodulatory peptides for multiple homeostatic systems, including sleep and feeding** *JOURNAL OF NEUROSCIENCE RESEARCH*  
Sutcliffe, J. G., De Lecea, L.  
2000; 62 (2): 161-168
- **Hypocretin-1 modulates rapid eye movement sleep through activation of locus coeruleus neurons** *JOURNAL OF NEUROSCIENCE*  
Bourgin, P., Huitron-Resendiz, S., Spier, A. D., Fabre, V., Morte, B., Criado, J. R., Sutcliffe, J. G., Henriksen, S. J., de Lecea, L.  
2000; 20 (20): 7760-7765
- **Mouse Tspan-5, a member of the tetraspanin superfamily, is highly expressed in brain cortical structures** *NEUROREPORT*  
Garcia-Frigola, C., Burgaya, F., Calbet, M., De Lecea, L., Soriano, E.  
2000; 11 (14): 3181-3185
- **Cortistatin: a member of the somatostatin neuropeptide family with distinct physiological functions** *BRAIN RESEARCH REVIEWS*  
Spier, A. D., de Lecea, L.  
2000; 33 (2-3): 228-241
- **Developmental regulation of two isoforms of Ca<sup>2+</sup>/calmodulin-dependent protein kinase I beta in rat brain** *BRAIN RESEARCH*  
Loseth, O. P., De Lecea, L., Calbet, M., Danielson, P. E., Gautvik, V., Hovring, P. I., Walaas, S. I., Gautvik, K. M.  
2000; 869 (1-2): 137-145
- **The hypocretins/orexins: novel hypothalamic neuropeptides involved in different physiological systems** *CELLULAR AND MOLECULAR LIFE SCIENCES*  
de Lecea, L., Sutcliffe, J. G.  
1999; 56 (5-6): 473-480
- **Cortistatin and somatostatin mRNAs are differentially regulated in response to kainate** *MOLECULAR BRAIN RESEARCH*  
Calbet, M., Guadano-Ferraz, A., Spier, A. D., Maj, M., Sutcliffe, J. G., Przewlocki, R., de Lecea, L.  
1999; 72 (1): 55-64
- **Leptin receptor- and STAT3-immunoreactivities in hypocretin/orexin neurones of the lateral hypothalamus** *JOURNAL OF NEUROENDOCRINOLOGY*  
Hakansson, M. L., De Lecea, L., Sutcliffe, J. G., Yanagisawa, M., Meister, B.  
1999; 11 (8): 653-663
- **Structural and compositional determinants of cortistatin activity** *JOURNAL OF NEUROSCIENCE RESEARCH*  
Criado, J. R., Li, H. T., Jiang, X. H., Spina, M., Huitron-Resendiz, S., Liapakis, G., Calbet, M., Siehler, S., Henriksen, S. J., Koob, G., Hoyer, D., Sutcliffe, J. G., Goodman, et al  
1999; 56 (6): 611-619

- **OCD-like behaviors caused by a neuropotentiating transgene targeted to cortical and limbic D1+neurons** *JOURNAL OF NEUROSCIENCE*  
Campbell, K. M., De Lecea, L., Severynse, D. M., Caron, M. G., McGrath, M. J., Sparber, S. B., Sun, L. Y., Burton, F. H.  
1999; 19 (12): 5044-5053
- **Cortistatin affects glutamate sensitivity in mouse hypothalamic neurons through activation of sst2 somatostatin receptor subtype** *NEUROSCIENCE*  
Vasilaki, A., Lanneau, C., Dournaud, P., De Lecea, L., Gardette, R., Epelbaum, J.  
1999; 88 (2): 359-364
- **Novel neurotransmitters for sleep and energy homeostasis. Results and problems in cell differentiation**  
Sutcliffe, J. G., De Lecea, L.  
1999; 26: 239-255
- **Hypocretin/orexin- and melanin-concentrating hormone-expressing cells form distinct populations in the rodent lateral hypothalamus: Relationship to the neuropeptide Y and Agouti gene-related protein systems** *JOURNAL OF COMPARATIVE NEUROLOGY*  
Broberger, C., De Lecea, L., Sutcliffe, J. G., Hokfelt, T.  
1998; 402 (4): 460-474
- **Neurons containing hypocretin (orexin) project to multiple neuronal systems** *JOURNAL OF NEUROSCIENCE*  
Peyron, C., Tighe, D. K., Van den Pol, A. N., De Lecea, L., Heller, H. C., Sutcliffe, J. G., Kilduff, T. S.  
1998; 18 (23): 9996-10015
- **Regional and cellular patterns of reelin mRNA expression in the forebrain of the developing and adult mouse** *JOURNAL OF NEUROSCIENCE*  
Alcantara, S., Ruiz, M., D'Arcangelo, G., Ezan, F., De Lecea, L., Curran, T., Sotelo, C., Soriano, E.  
1998; 18 (19): 7779-7799
- **Endogenous protein kinase A inhibitor (PKI alpha) modulates synaptic activity** *JOURNAL OF NEUROSCIENCE RESEARCH*  
De Lecea, L., Criado, J. R., Rivera, S., Wen, W., Soriano, E., Henriksen, S. J., Taylor, S. S., Gall, C. M., Sutcliffe, J. G.  
1998; 53 (3): 269-278
- **The hypocretins: Hypothalamus-specific peptides with neuroexcitatory activity** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
De Lecea, L., Kilduff, T. S., Peyron, C., Gao, X. B., Foye, P. E., Danielson, P. E., Fukuhara, C., Battenberg, E. L., Gautvik, V. T., Bartlett, F. S., Frankel, W. N., Van den Pol, A. N., Bloom, et al  
1998; 95 (1): 322-327
- **Cortistatin is expressed in a distinct subset of cortical interneurons** *JOURNAL OF NEUROSCIENCE*  
deLecea, L., delRio, J. A., Criado, J. R., Alcantara, S., Morales, M., Danielson, P. E., Henriksen, S. J., Soriano, E., Sutcliffe, J. G.  
1997; 17 (15): 5868-5880
- **Cloning, mRNA expression, and chromosomal mapping of mouse and human preprocortistatin** *GENOMICS*  
deLecea, L., RUIZLOZANO, P., Danielson, P. E., PeelleKirley, J., Foye, P. E., Frankel, W. N., Sutcliffe, J. G.  
1997; 42 (3): 499-506
- **Peptides, sleep and cortistatin** *MOLECULAR PSYCHIATRY*  
deLecea, L., Sutcliffe, J. G.  
1996; 1 (5): 349-351
- **The type 3 serotonin receptor is expressed in a subpopulation of GABAergic neurons in the rat neocortex and hippocampus** *BRAIN RESEARCH*  
Morales, M., Battenberg, E., deLecea, L., Bloom, F. E.  
1996; 731 (1-2): 199-202
- **Overview of the most prevalent hypothalamus-specific mRNAs, as identified by directional tag PCR subtraction** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Gautvik, K. M., deLecea, L., Gautvik, V. T., Danielson, P. E., Tranque, P., Dopazo, A., Bloom, F. E., Sutcliffe, J. G.  
1996; 93 (16): 8733-8738
- **Transient colocalization of parvalbumin and calbindin D28k in the postnatal cerebral cortex: Evidence for a phenotypic shift in developing nonpyramidal neurons** *EUROPEAN JOURNAL OF NEUROSCIENCE*  
Alcantara, S., deLecea, L., delRio, J. A., Ferrer, I., Soriano, E.  
1996; 8 (7): 1329-1339

- **Expression of NGF and NT3 mRNAs in hippocampal interneurons innervated by the GABAergic septohippocampal pathway** *JOURNAL OF NEUROSCIENCE*  
Rocamora, N., Pascual, M., Acsady, L., deLecea, L., Freund, T. F., Soriano, E.  
1996; 16 (12): 3991-4004
- **A cortical neuropeptide with neuronal depressant and sleep-modulating properties** *NATURE*  
deLecea, L., Criado, J. R., PROSPEROGARCIA, O., Gautvik, K. M., Schweitzer, P., Danielson, P. E., Dunlop, C. L., Siggins, G. R., Henriksen, S. J., Sutcliffe, J. G.  
1996; 381 (6579): 242-245
- **Cellular and subcellular immunolocalization of the type 3 serotonin receptor in the rat central nervous system** *MOLECULAR BRAIN RESEARCH*  
Morales, M., Battenberg, E., deLecea, L., Sanna, P. P., Bloom, F. E.  
1996; 36 (2): 251-260
- **Cell-specific effects of thyroid hormone on RC3/neurogranin expression in rat brain** *ENDOCRINOLOGY*  
Iniguez, M. A., deLecea, L., GUADANOFERRAZ, A., Morte, B., Gerendasy, D., Sutcliffe, J. G., Bernal, J.  
1996; 137 (3): 1032-1041
- **DEVELOPMENTAL EXPRESSION OF PARVALBUMIN MESSENGER-RNA IN THE CEREBRAL-CORTEX AND HIPPOCAMPUS OF THE RAT** *MOLECULAR BRAIN RESEARCH*  
deLecea, L., delRio, J. A., Soriano, E.  
1995; 32 (1): 1-13
- **THE GENE ENCODING RAT PHOSPHOGLYCERATE MUTASE SUBUNIT-M - CLONING AND PROMOTER ANALYSIS IN SKELETAL-MUSCLE CELLS** *GENE*  
RUIZLOZANO, P., deLecea, L., Buesa, C., DELAOSA, P. P., LePage, D., Gualberto, A., Walsh, K., Pons, G.  
1994; 147 (2): 243-248
- **THE DEVELOPMENT OF PARVALBUMIN-IMMUNOREACTIVITY IN THE NEOCORTEX OF THE MOUSE** *DEVELOPMENTAL BRAIN RESEARCH*  
delRio, J. A., deLecea, L., Ferrer, I., Soriano, E.  
1994; 81 (2): 247-259
- **G-PROTEIN GAMMA-7 SUBUNIT IS SELECTIVELY EXPRESSED IN MEDIUM-SIZED NEURONS AND DENDRITES OF THE RAT NEOSTRIATUM** *JOURNAL OF NEUROSCIENCE RESEARCH*  
Watson, J. B., COULTER, P. M., Margulies, J. E., deLecea, L., Danielson, P. E., Erlander, M. G., Sutcliffe, J. G.  
1994; 39 (1): 108-116
- **TRANSCRIPTS ENCODING A NEURAL MEMBRANE CD26 PEPTIDASE-LIKE PROTEIN ARE STIMULATED BY SYNAPTIC ACTIVITY** *MOLECULAR BRAIN RESEARCH*  
deLecea, L., Soriano, E., Criado, J. R., Steffensen, S. C., Henriksen, S. J., Sutcliffe, J. G.  
1994; 25 (3-4): 286-296
- **ISOLATION OF CLONES OF RAT STRIATUM-SPECIFIC MESSENGER-RNAs BY DIRECTIONAL TAG PCR SUBTRACTION** *JOURNAL OF NEUROSCIENCE*  
Usui, H., Falk, J. D., Dopazo, A., deLecea, L., Erlander, M. G., Sutcliffe, J. G.  
1994; 14 (8): 4915-4926
- **Four structurally distinct neuron-specific olfactomedin-related glycoproteins produced by differential promoter utilization and alternative mRNA splicing from a single gene.** *Journal of neuroscience research*  
Danielson, P. E., Forss-Petter, S., Battenberg, E. L., deLecea, L., Bloom, F. E., Sutcliffe, J. G.  
1994; 38 (4): 468-478
- **CHROMOSOMAL MAPPING OF MOUSE GENES EXPRESSED SELECTIVELY WITHIN THE CENTRAL-NERVOUS-SYSTEM** *GENOMICS*  
Danielson, P. E., Watson, J. B., Gerendasy, D. D., Erlander, M. G., Lovenberg, T. W., deLecea, L., Sutcliffe, J. G., Frankel, W. N.  
1994; 19 (3): 454-461
- **A NOVEL ADENYLYL CYCLASE-ACTIVATING SEROTONIN RECEPTOR (5-HT7) IMPLICATED IN THE REGULATION OF MAMMALIAN CIRCADIAN-RHYTHMS** *NEURON*  
Lovenberg, T. W., Baron, B. M., deLecea, 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, et al

1993; 11 (3): 449-458

- **Two members of a distinct subfamily of 5-hydroxytryptamine receptors differentially expressed in rat brain.** *Proceedings of the National Academy of Sciences of the United States of America*  
Erlander, M. G., Lovenberg, T. W., Baron, B. M., De Lecea, L., Danielson, P. E., Racke, M., SLONE, A. L., SIEGEL, B. W., Foye, P. E., Cannon, K.  
1993; 90 (8): 3452-3456
- **2 MEMBERS OF A DISTINCT SUBFAMILY OF 5-HYDROXYTRYPTAMINE RECEPTORS DIFFERENTIALLY EXPRESSED IN RAT-BRAIN** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Erlander, M. G., Lovenberg, T. W., Baron, B. M., deLecea, L., Danielson, P. E., Racke, M., SLONE, A. L., SIEGEL, B. W., Foye, P. E., Cannon, K., Burns, J. E., Sutcliffe, J. G.  
1993; 90 (8): 3452-3456
- **MOLECULAR APPROACH TO HYPOTHALAMIC RHYTHMS - ISOLATION OF NOVEL INDOLEAMINE RECEPTOR GENES** *JOURNAL OF BIOLOGICAL RHYTHMS*  
Erlander, M. G., Lovenberg, T. W., Baron, B. M., deLecea, L., Sutcliffe, J. G.  
1993; 8: S25-S31
- **LATE APPEARANCE OF PARVALBUMIN-IMMUNOREACTIVE NEURONS IN THE RODENT CEREBRAL-CORTEX DOES NOT FOLLOW AN INSIDE-OUT SEQUENCE** *NEUROSCIENCE LETTERS*  
Soriano, E., delRio, J. A., Ferrer, I., Auladell, C., deLecea, L., Alcantara, S.  
1992; 142 (2): 147-150
- **CLONING AND SEQUENCING OF A CDNA-ENCODING 2,3-BISPHOSPHOGLYCERATE-INDEPENDENT PHOSPHOGLYCERATE MUTASE FROM MAIZE - POSSIBLE RELATIONSHIP TO THE ALKALINE-PHOSPHATASE FAMILY** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Grana, X., deLecea, L., ELMAGHRABI, M. R., Urena, J. M., CAELLAS, C., Carreras, J., Puigdomenech, P., Pilakis, S. J., Climent, F.  
1992; 267 (18): 12797-12803
- **ISOLATION AND SEQUENCING OF A CDNA-ENCODING THE B-ISOZYME OF RAT PHOSPHOGLYCERATE MUTASE** *GENE*  
Urena, J. M., Grana, X., deLecea, L., Ruiz, P., Castella, J., Carreras, J., Pons, G., Climent, F.  
1992; 113 (2): 281-282