

Laszlo Prokai, PhD
Institute for Healthy Aging
Pharmacology & Neuroscience
School of Biomedical Sciences
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Area of Expertise

Dr. Prokai is the first Chair in Biochemistry endowed by the Houston-based Welch Foundation, one of the United States' oldest and largest private funding sources for basic research, at UNT Health Science Center. He is affiliated with UNTHSC's Department of Pharmacology and Neuroscience, and with the Institute of Healthy Aging. Dr. Prokai also is Adjunct Professor at the Department of Chemistry and Biochemistry, University of Texas at Arlington, as well as Adjunct Professor and Associate Member of the Graduate Faculty at the Department of Chemistry and Biochemistry of Texas Christian University.

His interests focus on chemistry-driven multidisciplinary research and include the discovery, chemical biology, bioorganic, and medicinal chemistry of central nervous system agents, as well as neuropeptides, proteomics, and mass spectrometry.

Dr. Prokai has maintained an actively funded research program from grant support by the National Institutes of Health (NIH) as well as through collaborations with pharmaceutical and chemical companies. Dr. Prokai was the recipient of the 2017 Wilfred T. Doherty Award of the Dallas/Fort Worth Section of the American Chemical Society (ACS) and the 2017 Southwest ACS Regional Award.

Qualifications

MS in Chemistry, University of Veszprem

BS in Chemical Engineering, University of Veszprem

PhD in Radiochemistry, University of Veszprem

Recent Publications

Global Comparative Label-Free Yeast Proteome Analysis by LC-MS/MS After High-pH Reversed-Phase Peptide Fractionation Using Solid-Phase Extraction Cartridges

Zaman, K., Pandey, P., Shulaev, V. & Prokai, L., 2022, *Methods in Molecular Biology*. Humana Press Inc., p. 71-84 14 p. (Methods in Molecular Biology; vol. 2396).

Mass spectrometry-based retina proteomics

Prokai, L., Zaman, K. & Prokai-Tatrai, K., 2022, (Accepted/In press) In: *Mass Spectrometry Reviews*.

Proteomics-based retinal target engagement analysis and retina-targeted delivery of 17 β -estradiol by the dhed prodrug for ocular neurotherapy in males

Prokai-Tatrai, K., Zaman, K., Nguyen, V., De La Cruz, D. L. & Prokai, L., Sep 2021, In: *Pharmaceutics*. 13, 9, 1392.

The antagonist pGlu- β Glu-pro-NH₂ binds to an allosteric site of the thyrotropin-releasing hormone receptor

De La Cruz, D. L., Prokai, L. & Prokai-Tatrai, K., Sep 2021, In: *Molecules*. 26, 17, 5397.

[β -glu²]trh is a functional antagonist of thyrotropin-releasing hormone (Trh) in the rodent brain

Prokai-Tatrai, K., Nguyen, V. & Prokai, L., 2 Jun 2021, In: *International journal of molecular sciences*. 22, 12, 6230.

Proteomics complementation of the rat uterotrophic assay for estrogenic endocrine disruptors: A roadmap of advancing high resolution mass spectrometry-based shotgun survey to targeted biomarker quantifications

Prokai, L., Rahlouni, F., Zaman, K., Nguyen, V. & Prokai-Tatrai, K., 2 Feb 2021, In: *International journal of molecular sciences*. 22, 4, p. 1-13 13 p., 1686.

Oligo(amylene) from the reaction of fusel oil with zinc dihalide

Davis, M. C., Prokai, L. & Woodroffe, J. D., 7 Jan 2021, In: *RSC Advances*. 11, 4, p. 1960-1968 9 p.

Comparative proteomics analysis reveals unique early signaling response of saccharomyces cerevisiae to oxidants with different mechanism of action

Pandey, P., Zaman, K., Prokai, L. & Shulaev, V., 1 Jan 2021, In: International journal of molecular sciences. 22, 1, p. 1-17 17 p., 167.

Carisoprodol pharmacokinetics and distribution in the nucleus accumbens correlates with behavioral effects in rats independent from its metabolism to meprobamate

Carbonaro, T. M., Nguyen, V., Forster, M. J., Gatch, M. B. & Prokai, L., 1 Sep 2020, In: Neuropharmacology. 174, 108152.

Brain-selective estrogen therapy prevents androgen deprivation-associated hot flushes in a rat model

Merchenthaler, I., Lane, M., Stennett, C., Zhan, M., Nguyen, V., Prokai-Tatrai, K. & Prokai, L., Jun 2020, In: Pharmaceuticals. 13, 6, p. 1-10 10 p., 119.

Sponsored Projects

2/2 Langston University-UNTHSC Partnership for Cancer Research and Education Cancer Research

Basha, R. & Prokai, L.

NCI: National Cancer Institute

20/09/18 → 31/08/22

2/2 Langston University-UNTHSC Partnership for Cancer Research and Education Cancer Research

Basha, R. & Prokai, L.

NCI: National Cancer Institute

20/09/18 → 31/08/22

A Novel Neuroprotective Approach for Glaucoma

Prokai-Tatrai, K. & Prokai, L.

NEI: National Eye Institute

1/08/16 → 31/07/21

Brain-selective estrogen therapy for menopausal hot flushes in an advanced translational animal model

Prokai, L., MERCHENTHALER, I. J. & PUCHE, A.

National Institute on Aging

15/01/21 → 31/12/21

Brain-selective estrogen therapy for menopausal hot flushes in an advanced translational animal model

PUCHE, A., Merchenthaler, I., PUCHE, A., Prókai, L., MERCHENTHALER, I. J. & Prokai, L.

15/01/21 → 31/12/22

Brain-Selective Therapy to Alleviate Hot Flushes of Prostate Cancer Patients

Prokai, L.

NCI: National Cancer Institute

1/04/17 → 31/03/20

Brain-Selective Therapy to Alleviate Hot Flushes of Prostate Cancer Patients

Prokai, L. & MERCHENTHALER, I. J.

National Cancer Institute

1/04/17 → 31/03/21

Brain-Selective Therapy to Alleviate Hot Flushes of Prostate Cancer Patients

Prokai, L. & Prókai, L.

1/04/17 → 31/03/21

BRAIN TARGETING OF THYROTROPIN RELEASING HORMONE ANALOGS

Prokai, L. & Prókai, L.
National Institute of Mental Health
5/08/99 → 31/07/04

BRAIN TARGETING OF THYROTROPIN RELEASING HORMONE ANALOGS

Prokai, L.
5/08/99 → 31/07/04

Effect of Glutaredoxin 2 (Grx2) siRNA on Drug Resistance of Hepatocellular Carcinoma Cells to Doxorubicin

Wu, H. & Prokai, L.
Intramural Research(UNTHSC)
1/09/13 → 31/08/15

Effects of brain-selective estradiol on gene expression and female sex behavior

Prokai, L., MERCHENTHALER, I. J., WALLEN, K., MERCHENTHALER, I. J., Prókai, L., WALLEN, K.,
MERCHENTHALER, I. J., Prókai, L. & WALLEN, K.
National Institute of Child Health and Human Development
5/08/13 → 31/05/16

Effects of brain-selective estradiol on gene expression and female sex behavior

WALLEN, K., MERCHENTHALER, I. J. & Prokai, L.
5/08/13 → 31/05/16

Effects of Brain-Selective Estradiol on Gene Expression and Female Sex Behavior

Prokai, L.
Emory University
5/08/13 → 31/05/14

ELECTROSPRAY IONIZATION ATMOSPHERIC PRESSURE CI MS

Prokai, L.
National Center for Research Resources
15/05/97 → 14/05/98

ELECTROSPRAY IONIZATION ATMOSPHERIC PRESSURE CI MS

Prokai, L.
15/05/97 → 14/05/98

Estrogen-Derived Para-Quinol Intervention In Alzheimer's Disease

Prokai, L. & Prokai-Tatrai, K.
University of Maryland at College Park
15/09/09 → 31/08/12

High-Resolution Tandem Mass Spectrometer for Advanced Biomolecular Research

Prokai, L., Forster, M. & Cheng, Y.
Intramural Research(UNTHSC)
27/01/17 → 31/01/18

Impact of brain estrogens on cognition and brain aging in a non-human primate

Prokai, L., LACREUSE, A. & MERCHENTHALER, I. J.
National Cancer Institute
1/01/21 → 31/12/21

Impact of brain estrogens on cognition and brain aging in a non-human primate

LACREUSE, A., MERCHENTHALER, I. J., Merchenthaler, I., LACREUSE, A., Prókai, L. & Prokai, L.
1/01/21 → 31/12/22

MASS SPECTROMETRY CORE

Prokai, L.
1/04/07 → 31/05/11

Mechanisms of Carisoprodol Abuse

Prokai, L.
West Virginia University Research Corp
1/02/12 → 31/05/14

Mechanisms of Carisoprodol Abuse

Prokai, L., DILLON, G., DILLON, G., Dillon, G. H., FORSTER, M. J., Prókai, L., Dillon, G. H., FORSTER, M. J., Prókai, L., FORSTER, M. & FORSTER, M.
National Institute on Drug Abuse
1/07/09 → 31/05/14

Mechanisms of Carisoprodol Abuse

DILLON, G., DILLON, G., FORSTER, M., Prókai, L., Forster, M. & Prokai, L.
1/07/09 → 31/05/14

Melanocortin Ligands in Disease Cachexia

Prokai, L.
Tensive Controls, Inc.
26/07/12 → 30/06/14

NEUROPEPTIDE FF ANTAGONISTS FOR TREATING OPIATE ABUSE

Prokai, L.
National Institute on Drug Abuse
9/07/98 → 30/06/00

NEUROPEPTIDE FF ANTAGONISTS FOR TREATING OPIATE ABUSE

Prokai, L.
9/07/98 → 30/06/00

Novel Mechanistic Targets of Steroid Hormones in the Brain

ALLERAND, D., Koulen, P., SIMPKINS, J., Singh, M., Forster, M. & Prokai, L.
15/08/07 → 30/11/18

Novel treatment of menopausal hot flushes with an estradiol prodrug

MERCHENTHALER, I. J. & Prokai, L.
1/03/09 → 28/02/14

Novel Treatment of Menopausal Hot Flushes with an Estradiol Prodrug

Prokai, L. & Prokai-Tatrai, K.
University of Maryland, Baltimore
30/09/09 → 29/02/12

Novel Treatment of menopausal hot flushes with an estradiol prodrug

Prokai, L., MERCHENTHALER, I. J., MERCHENTHALER, I. J., Prókai, L., MERCHENTHALER, I. J. & Prókai, L.
National Institute on Aging
1/03/09 → 28/02/14

Proteomic Analysis of Nasal Washes from Desert Tortoises for Detection of Microbial Pathogens

Simecka, J. & Prokai, L.
San Diego Zoo
1/08/13 → 31/12/16

Quantitative Proteomic Investigation of Estrogenic Endocrine-Disrupting Effects in the Rat Uterus (For: Fatima Sahyouni)

Prokai, L.

Intramural Research(UNTHSC)

1/01/15 → 31/08/16

Role of Brain Estradiol in the Treatment of Male Depression and Anxiety

Prokai, L.

University of Maryland, Baltimore

1/04/13 → 31/03/16

Role of Brain Estradiol in the Treatment of Male Depression and Anxiety

Prokai, L., GOULD, T., Gould, T. D. & Prókai, L.

National Institute of Mental Health

1/04/13 → 31/03/16

Role of Brain Estradiol in the Treatment of Male Depression and Anxiety

GOULD, T. & Prokai, L.

1/04/13 → 31/03/16

ROLE OF MITOCHONDRIAL ERB IN NEURONAL VULNERABILITY TO NEUROTOXIC STRESS

Singh, M., SIMPKINS, J., Koulen, P., Forster, M., Prokai, L. & ALLERAND, D.

National Institute on Aging

1/01/01 → 30/11/18

Survey of Age-Associated Carbonylation of Brain Proteins

Prokai, L., Prókai, L. & Prókai, L.

National Institute on Aging

30/09/04 → 31/08/10

Survey of Age-Associated Carbonylation of Brain Proteins

Prókai, L. & Prokai, L.

30/09/04 → 31/08/10

The Role of Quinols in Estrogen Neuroprotection

Prokai, L., Prókai, L. & Prókai, L.

National Institute of Neurological Disorders and Stroke

15/01/03 → 31/12/07

The Role of Quinols in Estrogen Neuroprotection

Prókai, L. & Prokai, L.

15/01/03 → 31/12/03