

Katalin Prokai-Tatrai, PhD
Graduate School of Biomedical Sciences
Institute for Healthy Aging
Pharmacology & Neuroscience
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Area of Expertise

The research in my laboratory is focused on medicinal chemistry-based drug design and delivery into the central nervous system with translational medicine in mind. We focus on agents (neuropeptides and estrogens) that are beneficial for brain and retinal health. Our projects involve pharmacokinetics, metabolism and drug distribution studies in early-phase drug discovery, and the development of neuroactive/neuroprotective agents for the protection of the aging/diseased brain and retina.

Qualifications

BS in Chemical Engineering, University of Veszprem
MS in Chemistry, University of Veszprem
PhD in Organic Chemistry, University of Veszprem

Recent Publications

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.

Breakthroughs in medicinal chemistry: New targets and mechanisms, new drugs, new hopes-7

Gütschow, M., Eynde, J. J. V., Jampilek, J., Kang, C. B., Mangoni, A. A., Fossa, P., Karaman, R., Trabocchi, A., Scott, P. J. H., Reynisson, J., Rapposelli, S., Galdier, S., Winum, J. Y., Brullo, C., Prokai-Tatrai, K., Sharma, A. K., Schapira, M., Azuma, Y. T., Cerchia, L., Spete, M. & 28 others, Torri, G., Collina, S., Geronikaki, A., García-Sosa, A. T., Helena Vasconcelos, M., Sousa, M. E., Kosalec, I., Tuccinardi, T., Duarte, I. F., Salvador, J. A. R., Bertinaria, M., Pellecchia, M., Amato, J., Rastelli, G., Gomes, P. A. C., Guedes, R. C., Sabatier, J. M., Estévez-Braun, A., Pagano, B., Mangani, S., Ragno, R., Kokotos, G., Brindisi, M., González, F. V., Borges, F., Miloso, M., Rautio, J. & Muñoz-Torrero, D., Jul 2020, In: Molecules. 25, 13, 2968.

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

Merenthaler, 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.

Topical estrogen therapy for hyperopia correction in vivo

Leshno, A., Prokai-Tatrai, K., Rotenstreich, Y., Magid, A., Bubis, E., Schwartz, S., Skaat, A., Zloto, O., Avni-Zauberman, N. & Barak, A., Jun 2020, In: Investigative Ophthalmology and Visual Science. 61, 6, 55.

Retina-targeted delivery of 17 β -estradiol by the topically applied dhed prodrug

Prokai-Tatrai, K., Nguyen, V., De La Cruz, D. L., Guerra, R., Zaman, K., Rahlouni, F. & Prokai, L., May 2020, In: Pharmaceuticals. 12, 5, 456.

17 β -estradiol delivered in eye drops: Evidence of impact on protein networks and associated biological processes in the rat retina through quantitative proteomics

Prokai, L., Zaman, K., Nguyen, V. & Prokai-Tatrai, K., Feb 2020, In: Pharmaceuticals. 12, 2, 101.

Breakthroughs in medicinal chemistry: New targets and mechanisms, new drugs, new hopes-6

Vanden Eynde, J. J., Mangoni, A. A., Rautio, J., Leprince, J., Azuma, Y. T., García-Sosa, A. T., Hulme, C., Jampilek, J., Karaman, R., Li, W., Gomes, P. A. C., Hadjipavlou-Litina, D., Capasso, R., Geronikaki, A., Cerchia, L., Sabatier, J. M., Ragno, R., Tuccinardi, T., Trabocchi, A., Winum, J. Y. & 22 others, Luque, F. J., Prokai-Tatrai, K., Spetea, M., Gütschow, M., Kosalec, I., Guillou, C., Vasconcelos, M. H., Kokotos, G., Rastelli, G., De Sousa, M. E., Manera, C., Gemma, S.,

Mangani, S., Siciliano, C., Galdiero, S., Liu, H., Scott, P. J. H., De Los Ríos, C., Agrofoglio, L. A., Collina, S., Guedes, R. C. & Muñoz-Torrero, D., 2020, In: *Molecules*. 25, 1, 119.

A novel prodrug approach for central nervous system-selective estrogen therapy

Prokai-Tatrai, K. & Prokai, L., 19 Nov 2019, In: *Molecules*. 24, 22, 4197.

Brain delivery of thyrotropin-releasing hormone via a novel prodrug approach

Prokai-Tatrai, K., De La Cruz, D. L., Nguyen, V., Ross, B. P., Toth, I. & Prokai, L., Jul 2019, In: *Pharmaceutics*. 11, 7, 349.

Breakthroughs in medicinal chemistry: New targets and mechanisms, new drugs, new hopes-4

Mangoni, A. A., Guillou, C., Eynde, J. J. V., Hulme, C., Jampilek, J., Li, W., Prokai-Tatrai, K., Rautio, J., Collina, S., Tuccinardi, T., Sousa, M. E., Sabatier, J. M., Galdiero, S., Karaman, R., Kokotos, G., Torri, G., Javier Luque, F., Helena Vasconcelos, M., Hadjipavlou-Litina, D., Siciliano, C. & 5 others, Gütschow, M., Ragno, R., Gomes, P. A. C., Agrofoglio, L. A. & Muñoz-Torrero, D., 2019, In: *Molecules*. 24, 1, p. 1-12 12 p.

Sponsored Projects

A Novel Neuroprotective Approach for Glaucoma

Prokai-Tatrai, K. & Prokai, L.

NEI: National Eye Institute

1/08/16 → 31/07/21

A Novel Neuroprotective Approach for Glaucoma

Prokai-Tatrai, K.

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A Novel Prodrug Approach to Deliver TRH into the Brain

Prokai-Tatrai, K.

Intramural Research(UNTHSC)

1/03/15 → 31/08/17

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

Novel Molecular Probes for Membrane Progesterone Receptors

Prokai-Tatrai, K.

NIA: National Institute on Aging

15/03/10 → 28/02/13

Novel Treatment of Menopausal Hot Flashes with an Estradiol Prodrug

Prokai, L. & Prokai-Tatrai, K.

University of Maryland, Baltimore

30/09/09 → 29/02/12