**Curriculum Vitae**

Istvan J Merchenthaler, MD, PhD, DSc

Professor, Department of Epidemiology & Public Health (EPH)

Director, Translational Toxicology of EPH

Professor, Department of Neurobiology

University of Maryland School of Medicine

**Date:** 5-7-2024

# Contact Information

Epidemiology & Public Health, Division of Translational Toxicology

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Foreign Languages: Hungarian (native), Latin working knowledge

# Education:

1962-1967: Grammar (High) School: III. Bela Gimnazium, Baja, Hungary

1968-1974: Medical School, University of Pecs, Hungary

## **Post Graduate Education and Training:**

1986: Doctor of Philosophy (PhD), in Neuroendocrinology, Hungarian Academy of Sciences, Budapest, Hungary;

1992: Doctor of Sciences (DSc): Neuroendocrinology, Hungarian Academy of Sciences

1997: Doctor Habil: Albert Szent-Gyorgyi Medical School, Szeged, Hungary

# Employment History:

2004-present Professor, Epidemiology & Public Health, University of Maryland School of

Medicine

2004-present Professor, Department of Anatomy and Neurobiology, University of Maryland

School of Medicine

2004 Chief Medical Officer, Phylogeny Inc. Columbus, OH

2003-2004 Distinguished Research Scientist, Women’s Health and Bone, Wyeth Research,

Collegeville, PA

1994-2003 Director, Women’s Health Research Institute, Wyeth Research, Radnor, PA

1988-1994 Visiting Scientist, Section Head, Laboratory of Molecular and Integrative

Neuroscience, National Institute of Environmental Health Sciences, National Institutes of Health, Research Triangle Park, NC

1984-1988 Associate Professor, Department of Anatomy, University Medical School, Pecs,

Hungary

1974-1984 Assistant Professor, Department of Anatomy, University Medical School, Pecs,

Hungary

1981-1983 Visiting Scientist, Department of Cell Biology and Anatomy, University of North Carolina, Chapel Hill, NC

1984 Visiting Scientist, US-Japan Biomedical Research Center, Tulane University, Belle Chasse, LA

# Professional Society Membership:

1981-1984 American Associations of Anatomists

1981-1984 US-Japan Histochemical Society

1981-2021 The Endocrine Society

1988- Society for Neuroscience

1984- International Brain Research Organization

# Honors and Awards:

1984 Lenhossek Award; Hungarian Academy of Sciences/Hungarian Associations of

Anatomists

1984 Awarded Endocrine Society Travel Grant for Int. Congress of Endocrinology,

Quebec, Canada

1986 Distinguished Young Scientist Award, Hungarian Academy of Sciences

1988 Awarded Endocrine Society Travel Grant for Int. Congress of Endocrinology,

Kyoto, Japan

# Administrative Service:

1984-1988 Anatomy, University Medical School, Pecs, Hungary. Supervisor/coordinator: Human Gross Anatomy Course; Department of Anatomy

**Institutional Service:**

Departmental

2005-2015 Member, Appointment, Tenure & Promotion (APT) Committee, Epidemiology & Public Health (formerly DEPM) University of Maryland School of Medicine

2005-2008 Member, Seminar Committee, Epidemiology & Public Health University of Maryland

2005-2008 Member, Institutioal Research Committee, Department of Epidemiology & Preventive Medicine, University of Maryland

2006-2007 Member, School of Medicine Council

2005-present Judge, Graduate Progam Research Day

2005-present Judge, Medical Students Research Day

2021-present Member, Appointment, Tenure & Promotion (APT) Committee, Epidemiology & Public Health, University of Maryland School of Medicine

Campus-wide:

2010 Organizer of Minisymposium; New directions for treating menopausal symptoms, UMB

**National Service:**

1998 Co-Organizer of Symposium; Hormone-Brain Interaction, Breckenridge, CO

**International Service:**

2000 Organizer, International Symposium on Estrogen Receptors in Health and Disease, Pecs, Hungary

2002 Organizer, International Symposium on Hot Flushes, Collegeville, PA

**Editorial Board:**

1994-1998 Endocrinology

2008-2012 Endocrinology

2013-present Frontiers

**Reviewer Activity:**

1996 *Ad hoc* Reviewer, NSF

1996 *Ad hoc* Reviewer, Alzheimer’s Society

2000 *Ad hoc* Reviewer, NIMH/NIH

2004 *Ad hoc* Reviewer, NHMRC, Canada

2023 *Ad hoc* Reviewer, NIH/CSR/ZRG1

2022 *Ad hoc* Reviewer, Florida Department of Health Biomedical Research Pprograma

**Reviewer (Journals):**

Brain Connectivity

*Brain Research*

*Brain Structure and Function*

*Endocrinology*

*Frontiers*

*Journal of Comparative Neurology*

*Journal of Chemical Neuroanatomy*

*Journal of Endocrinology*

*Journal of Neuroscience*

*Neuroendocrinology*

*Neuroscience*

*PLoSOne*

*Proceedings of the National Academy of Sciences, USA*

*Trends in Endocrinology and Metabolism*

# Teaching Service:

Prior to my UMB appointment

*Medical students, Lectures and laboratory*

1972-1974 Teacher Assistant, Department of Anatomy, University Medical School, Pecs,

Hungary. Taught Human Gross Anatomy (including neuroscience), Histology and

Embryology. Two classes, size of 25. 6 hrs/week, 28 weeks/year.

1974-1981 Assistant Professor; Department of Anatomy, University Medical School, Pecs,

Hungary. Taught Human Gross Anatomy (including neuroscience), Histology and

Embryology. Two classes, size of 25. 12 hrs/week, 28 weeks/year.

1984-1988 Associate Professor; Department of Anatomy, University Medical School, Pecs,

Hungary. Taught Human Gross Anatomy (including neuroscience), Histology and

Embryology to medical students. Two classes, size of 55 (Hungarian) and one class, size

of 25 (English). 18 hrs/week, 28 weeks/year.

1984-1988 Supervisor/coordinator: Human Gross Anatomy Course; Department of Anatomy,

University Medical School, Pecs, Hungary, 1984-1988

2001-2002 Department of Cell Biology and Anatomy, University of North Carolina, Chapel Hill,

NC. As a Volunteer, taught Human Gross Anatomy for medical students. One class, size

of 24; 4 hrs/week, 10 weeks/year.

*Undergraduate Students*

1998-2003 Invited Lecturer, Department of Pharmacology, University of Pennsylvania,

Philadelphia, PA. One lecture yearly on Steroid Hormone Receptors. Class size: 20.

At UMB

*Medical student, Lectures (Gross Anatomy, Embryologgy & Histology)*

2004-present Department of Anatomy & Neurobiology, Univesity of Maryland School of Medicine.

12 lectures/year. Class size: 165.

*Medical student, Laboratory (Gross Anatomy & Histology)*

2004-present Department of Anatomy & Neurobiology, University of Maryland School of Medicine. Teaches Human Gross Anatomy and Histology. 10 hrs/week, 10 weeks/year, 100 hrs total. Class size: 165.

*Medical student, Lectures (Neurosciecne)*

2004-present Department of Anatomy & Neurobiology, University of Maryland School of Medicine. Teaches macroscopic brain anatomy, 2 hours/block. Class size: 165

*Medicall student, Laboratory (Neuroscience)*

2004-presentDepartment of Anatomy & Neurobiology, University of Maryland School of Medicine.

Teaches macroscopic brain anatomy, 2 hour /block. Class size: 165

*Dental student, Lectures*

2012-present Department of Neuroscience & Pain, Univesity of Maryland School of Dentistry.

8 lectures/year on Human Gross Anatomy and Embryology. Class size: 130.

*Dental student, Laboratory (Gross Anatomy)*

2012-present Department of Neuroscience & Pain, University of Maryland School of Dentistry. Teaches Human Gross Anatomy. 7 hrs/week, 12 weeks/year, 84 hours total. Class size: 130.

*Dental residents, Advanced Face Anatomy, Course director*

2022-present Department of Neuroscience & Pain, University of Maryland School of Dentistry. Teaches Human Gross Anatomy. 6 hrs/week, 12 weeks/year, 72 hours total. Class size: 15.

*Graduate Students*

2005-2008 Course Master, GPILS-613, Neuroendocrinology

2 hours/course, 10 weeks/alternate years, Class size: 10

2012-present Co-Course master, GPILS-711, Gerontology: Biology of Aging

4 hours/course, 10 weeks/alternate years, Class size: 18

2006-2019 Graduate Program, GPILS-623, Molecular Toxicology One lecture/year. Class size: 8

2005-2008 Graduate Program-CIPP 907, Research Ethics. One hour/year

*School of Nursing lectures*

2005-2016 NPHY614/BSCI614: Physiology of Aging, One hour/year. Class size: 25-40

*PhD Thesis Committee*

2005 Anna Baron, Sir James McCusker Alzheimer’s Disease Research Unit, Western

Australia

2005-2009 Chris Wright (GPILS)

2008-2011 Amanda Nelson (GPILS)

2011 Zsombor Koszegi, University of Otago, New Zeeland

2008-2011 Tracy Hermanstyne (GPILS)

2008-2012 Bridget Nugget (GPILS)

2009-2012 Jamila Asgar (GPILS)

2010-2015 Danielle Gusmano (GPILS)

2007-2015 Girish Kulkarni (GPILS)

2013-2018 Kathrina Williams (GPILS)

2013-2017 Todd Spencer (GPILS)

2013-2017 Richard Burke (GPILS)

2018-2020 Eric Sundberg (GPILS)

2017-2010 Alex Klausing (GPILS)

2019-2020 Allison Narizzano (GPILS)

2020-2022 Zoe Johnson (UMES)

2021-2022 Molly Pruitt (GPILS)

2020-2023 Christina Stennett

**Mentoring:**

Prior to my UMB appointment

1990- 2003 Trained postdoctoral fellows (Drs. Graziano Ceresini and Antonella Favit from Italy; and Philippa Charlton from the University of North Carolina) while at NIEHS/NIH, Research Triangle Park, NC

At UMB

2006-2017 Director, BIRCWH, University of Maryland

2005-2007 Mentor, BIRCWH Scholar (Dr. Leo Tonelli)

2008-2013 Mentor, BIRCWH Scholar (Drs. Jessica Brown, Jian-Min Zhang and Peixin Yang

2010-2012 Mentor, BIRCWH Scholar (Drs. Julie Markham and Jessica Brown)

2016-2017 Mentor, BIRCWH Scholar (Dr. Ana Pavcieva)

# 2020-present Mentor, EPH, Universityh of Maryland (Christina Stennett)

# Grant Support:

**Ongoing Research Support**

ACTIVE

R01AG070072 (Merchenthaler I, Prokai L, Puche A, MPI) 09/01/2020-08/31/2025 4.2 cal. months

NIH/NIA $3,009.022

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

Overview: To evaluate the brain-selective estrogen as a side effect-free therapy for menopausal hot flushes in rhesus monkeys

Role: PI, contact PI

R01CA246929 (Lacreuse A, Prokai L, Merchenthaler I MPI) 07/01/2020-06/30/2025 0.60 cal. months

NIH/NCI $3,509.413

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

Overview: This proposal uses a primate model to understand how aromatase inhibitors affect the brain and behavior and to test whether a drug that delivers estrogens exclusively to the brain can safely alleviate these deficits.

Role: MPI

1 I001 BX006018-01 (Gould T, PI) 04/01/2022—3/31/2026 0.9 cal. months

VA Merit Award $1,243.343

Estradiol treatment of stress-related psychiatric disorders in Veterans

Overview: We propose to advance knowledge regarding the role of targeting estradiol signaling as a treatment mechanism for stress-induced neuropsychiatric disorders, and further the discovery of a brain-selective and orally bioavailable prodrug of estradiol based on the previously characterized structure of the molecule.

Role: Co-I

R21MH129809-02 (Brown PI) 10/01/22-09/31/24 0.6 cal. months

$221,705

Estrogen modulation of the lateral habenula and its ability to inhibit midbrain dopamine neurons.

Overview: This proposal tests the hypothesis that circulating estrogen mediates the observed sex  
difference in lateral habenula (LHb)-induced inhibition of midbrain dopaminergic neuronal firing in rats

Role: Co-I

University of Maryland Claude D. Pepper Older Americans Independence Center 0.0 cal. month

(UM-OAIC)

Mamczarz (PI) $30,000

A combination therapy with a brain-selective estrogen and physical exercise to halt or slow the progression of cognitive decline.

**Pending Research Projects**

1R21AG089437 (Merchenthaler-Mamczarz, MPI) 07/01/2024-06/30/2026 0.6 cal. months

NCI/NIH $275,000

Role of the emndocannabinoid system in the development of chloropyrifos-induced cognitive impairment and Alzheimer’s disease-related brain neuropathology, a guinea pig model.

**Role PI (MPI)**

R21AG085392 (Merchenthaler-Mamczarz, MPI) 07/01/2024-06/30/2026 0.6 cal. months

NCI/NIH $275,000

Effects of 4-vinylcyclohexane diopexide-induced accelerated ovarian failure on development of hallmarks of Alzheimer’s disease in guinea pigs: a non-transgenic animal model.

Role: PI (MPI)

**Patents, Inventions and Copyrights:**

AM101118 - Agonism of the 5HT2A Receptor for Treatment of Thermoregulatory Dysfunction.

Published Application No. 2004-0063721A1

AM101156 - Use of Norepinephrine Reuptake Modulators for Preventing and Treating

Vasomotor Symptoms. Published Application No. 2004-0143008A1 & 2004-0152710A1

AM101222 - A Novel Method of Treating Vasomotor Symptoms. Filed and in prosecution.

**Refereed publications: Impact Factor: 655; h-index: 65; Number of citations: 13,404**

1. Rozsos, I., **Merchenthaler, I.,** and Horváth, S.: Terminális vékonybélingerlés hatása a gyommor‑sósav kiválasztásra patkányban. *Kisérletes Orvostudomány 25: 279‑283, 1973*
2. Rozsos, I., Horváth S., and **Merchenthaler, I.**: Adat a terminális vékonybél és a gyomor közti reflex‑kapcsolatok idegi jellegéhez. *Kisérletes Orvostudomány 25: 373‑377, 1973.*
3. Rozsos, I., **Merchenthaler, I.,** and Horváth, S.: Ganglion coeliacum‑ban záruló reflex‑iv lehetôsége. *Kisérletes Orvostudomány 25: 397‑399, 1973.*
4. Rozsos, I., Horváth, S., and **Merchenthaler, I.**: A terminális vékonybél és a gyomor közti reflex‑iv afferens szára. *Kisérletes Orvostudomány 26: 80‑82, 1974.*
5. Rozsos, I., **Merchenthaler, I.,** and Horváth, S.: A terminális vékonybél és a gyomor közti reflex‑kapcsolat sympathicus idegi jellege. K*isérletes Orvostudomány 26: 550‑552, 1974.*
6. Rozsos, I., **Merchenthaler, I.,** and Horváth, S.: Nervus splanchnicus és ganglion coeliacum kiirtás hatása a gyomorsav kiválasztásra. *Kisérletes Orvostudomány 27: 595‑598, 1975.*
7. Kovács, M., **Merchenthaler, I.,** and Flerkó, B.: Oestradiol uptake by intact and sympathectomized genital tract of the female rabbit. *Acta. Biol. Acad. Sci. Hung. 27: 321‑324, 1976.*
8. Rozsos, I., Kovács, M., and **Merchenthaler, I.**: Ganglion coeliacum kiirtás hatasa az immobilizációs fekély kialakulására. *Kisérletes Orvostudomány 31: 186‑191, 1979.*
9. **Merchenthaler, I.,** Sétáló, G., Horváth, J., and Flerkó, B.: Regenerative efforts of the transected LH‑RH axons in the brain of the rat. *Acta. Biol. Acad. Sci. Hung. 31: 201‑205, 1980.*
10. **Merchenthaler, I.,** Lengvári, I., Horváth, J., and Sétáló, G.: Immunocytochemical study of the LH‑RH‑synthesizing neuron system of the aged female rats. *Cell Tissue Res. 209: 499‑503, 1980.*
11. **Merchenthaler, I.,** Kovács, G., Lovász, G., and Sétáló, G.: The preoptico‑infundibular LH‑RH‑tract of the rat. *Brain Res. 198: 63‑74, 1980.*
12. Flerkó, B., Sétáló, G., Vigh, S. and **Merchenthaler, I.**: Recent immunohistochemical findings on the LHRH neuron system of the rat. *Materia Medica Polona 12:119-123, 1980. IF: NA Scit: 17*
13. **Merchenthaler, I.,** Lengvári, I., Rostás, B., and Sétáló, G.: Pituitary‑adrenal function after isolated removal of the median eminence of the rat. *Endocrinologie 77: 185‑191, 1981.*
14. Réthelyi, M., Vigh, S., Sétáló, G., **Merchenthaler, I.,** Flerkó, B., and Petrusz, P.: The luteinizing hormone-releasing hormone‑containing pathways and their co‑termination with tanycyte processes in and around the median eminence and pituitary stalk of the rat. *Acta. Morph. Acad. Sci. Hung. 29: 259‑283, 1981.*
15. **Merchenthaler, I.,** Görcs, T., and Sétáló, G.: Neurons containing luteinizing hormone‑releasing hormone in the induseum griseum of the rat. *Acta. Morph. Acad. Sci. Hung. 30: 151‑156, 1982.*
16. Gallyas, F., Görcs, T., and **Merchenthaler, I.**: High grade intensification of the endproduct of the diaminobenzidine reaction demonstrating peroxidase activity. *J. Histochem. Cytochem. 30: 183‑185, 1982.*
17. Vigh, S., **Merchenthaler, I.,** Torres‑Aleman I., Sueiras‑Diaz, J., Coy, D.H., Carter, W.H., Petrusz, P., and Schally, A.V.: Corticotropin-releasing factor (CRF): Immunocytochemical localization and radioimmunoassay (RIA). *Life Sci. 31: 22441‑2448, 1982.*
18. **Merchenthaler, I.,** Vigh, S., Petrusz, P., and Schally, A.V.: Immunocytochemical localization of corticotropin-releasing factor (CRF) in the rat brain. *Am. J. Anat. 165: 385‑396, 1982.*
19. **Merchenthaler, I.,** Görcs, T., and Petrusz, P.: Silver intensification of diaminobenzidine reaction product for peroxidase immunocytochemistry. *J. Histochem. Cytochem. 30: 607, 1982.*
20. Fitzpatrick, D., Cheema, S., **Merchenthaler, I.,** and Rustioni, A.: Improved visualization of neurons labeled with horseradish peroxidase: silver intensification of the pyrocathecol ß‑phenylendiamine reaction product. *J. Neurosci. Methods 8: 161‑169, 1983.*
21. **Merchenthaler, I.,** Vigh, S., Petrusz, P., and Schally, A.V.: The paraventriculo‑infundibular corticotropin-releasing factor (CFR)‑pathway as revealed by immunochemistry in long‑term hypophysectomized or adrenalectomized rats. *Regul. Pept. 5: 295‑305, 1983.*
22. **Merchenthaler, I.,** Hynes, M.A., Vigh, S., Schally, A.V., and Petrusz, P.: Immunocytochemical localization of corticotropin-releasing factor (CRF) in the rat spinal cord. *Brain Res. 275: 373‑377, 1983.*
23. Petrusz, P., **Merchenthaler, I.,** Maderdrut, J.L., Vigh, S., and Schally, A.V.: Corticotropin-releasing factor (CRF)‑like immunoreactivity in the vertebrate endocrine pancreas. *Proc. Natl. Acad. Sci. USA, 80: 1721‑1725, 1983.*
24. **Merchenthaler, I.**: Corticotropin-releasing factor (CRF)‑like immunoreactivity in the rat central nervous system. Extrahypothalamic distribution. *Peptides 5(Suppl. 1): 53‑69, 1984.*
25. **Merchenthaler, I.,** Hynes, M.A., Vigh, S., Schally, AV, and Petrusz, P.: Corticotropin-releasing factor (CRF): Origin and course of afferent pathways to the median eminence (ME) of the rat hypothalamus. *Neuroendocrinology 39: 296‑306, 1984.*
26. **Merchenthaler, I.,** Vigh, S., Arimura, A., and Stumpf, W.E.: CRF‑immunoreactive structures in the rat thalamus. *Brain Res. 323:119‑122, 1984.*
27. **Merchenthaler, I.,** Vigh, S., Schally, A.V., and Petrusz, P.: Immunocytochemical localization of growth hormone-releasing factor (GHRF) in the rat hypothalamus. *Endocrinology 114:1082‑1085, 1984.*
28. **Merchenthaler, I.,** Görcs, T., Sétáló, G., Petrusz, P., and Flerkó, B.: Gonadotropin-releasing hormone (GnRH) neurons and pathways in the rat brain. *Cell Tissue Res. 237: 15‑29, 1984.*
29. **Merchenthaler, I.,** Thomas, C.R., Arimura, A.: Immunocytochemical localization of growth hormone-releasing factor (GHRF)‑containing structures in the rat brain using anti‑rat GHRF serum. *Peptides 5:1071‑1076, 1984.*
30. Petrusz, P., **Merchenthaler, I.,** Ordronneau, P., Maderdrut, J.L., Vigh, S., and Schally, A.V.: Corticotropin-releasing factor (CRF)‑like immunoreactivity in the gastro‑entero‑pancreatic endocrine system. *Peptides 5(Suppl. 1): 71‑78, 1984.*
31. **Merchenthaler, I.** and Arimura, A.: Effect of hypophysectomy on immunocytochemically demonstrated growth hormone-releasing factor (GHRF) in the rat brain. *Peptides 6: 865‑867, 1985.*
32. Petrusz, P., **Merchenthaler, I.,** Maderdrut, J.L., and Heitz, P.U.: Central and peripheral distribution of corticotropin-releasing factor. *Fed. Proc. 44: 229‑235, 1985.*
33. **Merchenthaler, I.,** Maderdrut, J.L, Altshuler, R.A., and Petrusz, P.: Immunocytochemical localization of proenkephalin‑derived peptides in the central nervous system of the rat. *Neuroscience 17: 325‑348, 1986.*
34. **Merchenthaler, I.,** Csontos, C., Kalló, I., and Arimura, A.: The hypothalamo‑infundibular growth hormone-releasing system of the rat. *Brain Res. 378: 297‑302, 1986.*
35. Maderdrut, J.L., **Merchenthaler, I.,** Sundberg, D.K., Okado, N., and Oppenheim, R.W.: Distribution and development of proenkephalin‑like immunoreactivity in the lumbar spinal cord of the chicken. *Brain Res. 377: 29‑40, 1986.*
36. Jirikowski, G.F., **Merchenthaler, I.,** Rieger, G.E., and Stumpf, W.E.: Estradiol target sites immunoreactive for beta‑endorphin in the arcuate nucleus of rat and mouse hypothalamus. *Neuorsci. Lett. 65: 121‑126, 1986.*
37. **Merchenthaler, I.,** Maderdrut, J.L., Lázár, G., Gulyás, J., and Petrusz, P.: Immunocytochemical localization of proenkephalin‑derived peptides in the amphibian hypothalamus and optic tectum. *Brain Res. 416: 219‑277, 1987.*
38. Józsa R., Korf, M.W., and **Merchenthaler, I.**: Growth hormone-releasing factor (GHRF)‑like immunoreactivity in sensory ganglia of the rat. *Cell Tissue Res. 247: 441‑444, 1987.*
39. **Merchenthaler, I.,** Culler, M.D., Petrusz, P., and Negro‑Vilar, A.: Immunocytochemical localization of inhibin in rat and human reproductive tissues. *Mol. Cell. Endocrinol. 54: 239‑243, 1987.*
40. Iwasaki, K., Fujii, A., **Merchenthaler, I**., Groot, K., Arimura, A.: The stimulation of somatostatin release by hpGRF44 from rat hypothalamic cells and fragments in vitro. *Tokai J. Exp. & Clin. Med. 12:117-124, 1987.*
41. Gallyas, F., and **Merchenthaler, I.**: Copper‑H2O2 oxidation strikingly improves silver intensification of the nickel‑diaminobenzidine (Ni‑DAB) end‑product of the peroxidase reaction. *J. Histochem. Cytochem. 36: 807‑810, 1988.*
42. **Merchenthaler, I.,** Maderdrut, J.L., Weber, E., and Petrusz, P.: Characterization of metorphamide‑like immunoreactivity in the zona incerta and lateral‑hypothalamus: colocalization with a‑melanocyte stimulating hormone‑like immunoreactivity. *Brain Res. 452: 87‑96, 1988.*
43. **Merchenthaler, I.,** Csernus, V., Csontos, C., Petrusz, P., and Mess, B.: New data on the immunocytochemical localization of thyrotropin-releasing hormone (TRH) in the rat central nervous system. *Amer. J. Anat. 181: 359‑376, 1988.*
44. Liposits, Zs., **Merchenthaler, I.,** Paull, W.K., and Flerkó, B.: Synaptic communication between somatostatinergic axons and growth hormone‑releasing factor (GRF) synthesizing neurons in the arcuate nucleus of the rat. *Histochemistry 89: 247‑252, 1988.*
45. **Merchenthaler, I.,** Culler, M.D., Negro‑Vilar, A., Petrusz, P., and Flerkó, B.: The Pro‑LHRH system of the rat brain. Effect of changes in the endocrine background. *Brain Res. Bulletin 20: 713‑720, 1988.*
46. Culler, M.D., Valenca, M.M., **Merchenthaler, I.,** Flerkó, B., and Negro‑Vilar, A.: Orchidectomy induces temporal and regional changes in the processing of the LHRH prohormone in the rat brain. *Endocrinology 122: 1968‑1976, 1988.*
47. **Merchenthaler, I.,** Culler, M.D., Petrusz, P., Flerkó, B., and Negro‑Vilar, A.: Immunocytochemical localization of the gonadotropin‑releasing hormone‑associated peptide portion of the LHRH precursor in the hypothalamus and extrahypothalamic regions of the rat central nervous system. *Cell Tissue Res. 255: 5‑14, 1989.*
48. **Merchenthaler, I.,** Lázár, G., and Maderdrut, J.L.: Distribution of proenkephalin‑derived peptides in the brain of Rana Esculenta. *J. Comp. Neurol. 281: 23‑39, 1989.*
49. **Merchenthaler, I.,** Meeker, M., Petrusz, P., and Kizer, J.S.: Identification and immunocytochemical localization of a new TRH precursor in rat brain. *Endocrinology 124: 1888‑1897, 1989.*
50. **Merchenthaler, I.,** Stankovics, J. and Gallyas, F.: A highly sensitive one step method for the silver‑intensification of the nickel‑diaminobenzidine end‑product of peroxidase reaction. *J. Histochem. Cytochem. 37: 1563-1565, 1989.*
51. **Merchenthaler, I.,** Sétáló, G., Csontos, C., Petrusz, P., Flerkó, B. and Negro-Vilar, A.: Combined retrograde tracing and immunocytochemical identification of luteinizing hormone-releasing hormone-and somatostatin-containing neurons projecting to the median eminence of the rat. *Endocrinology 125: 2812-2821, 1989.*
52. **Merchenthaler, I.,** Sétáló, G., Petrusz, P., Negro‑Vilar, A., and Flerkó, B: Identification of hypophysiotropic luteinizing hormone releasing hormone (LHRH) neurons by combined retrograde labeling and immunocytochemistry. *Exp. Clin. Endocrinol. 94:133-140, 1989.*

*IF: 1.68 Cit: 24*

1. **Merchenthaler, I.,** López, F.J. and Negro-Vilar, A.: Colocalization of galanin and luteinizing hormone-releasing hormone in a subset of preoptic hypothalamic neurons: Anatomical and functional correlates. *Proc. Natl. Acad. Sci. USA 87:6326-6330, 1990.*
2. Lázár, G., Maderdrut, J.L. and **Merchenthaler, I.**: Some enkephalinergic pathways in the brain of Rana Esculenta: an experimental analysis. *Brain Res. 521: 238-246, 1990.*
3. Sétáló, G. and **Merchenthaler, I.**: Translingual approach of the basal surface of the diencephalon of the rat and retrograde labeling from the median eminence. J. *Neurosci. Methods 35:169-173, 1990.*
4. **Merchenthaler, I.**: Retrograde labeling of hypophysiotropic neurons from the median eminence by local injection of wheat germ agglutinin (WGA) or peripheral administration of Fluoro-Gold. *Mol. Cell. Neurosci. 1:93-106, 1990.*
5. **Merchenthaler, I.**: Co‑localization of enkephalin and TRH in perifornical neurons of the rat hypothalamus that project to the lateral septum. *Brain Res. 544:177-180, 1991.*
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165. **Merchenthaler, I**. and Prokai, L.: Central nervous system-selective estrogens: a safe estrogen therapy. *Cyberrounds, 2010.*

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**Non-refereed publications (Proceedings):**

1. Vigh, S., **Merchenthaler, I.,** Petrusz, P., Schally, A.V., and Flerkó, B.: Distribution of corticotropin releasing factor (CRF) in the central nervous system. In Labrie, F., Proulx, L. (eds) *Endocrinology. Proc. 7th Int. Cong. Endocr. Exrepta Medica, Amsterdam, pp. 945‑954, 1984.*

2. Arimura, A., and **Merchenthaler, I.**: Localization of GHRH in the rat brain. In Vizi, E.S., and Magyar, K. (eds) *Regulation of Transmission Function: Basic and Clinical Aspects, GHRF, Part 1, Akademiai Kiado, Budapest, pp. 117‑128, 1984.*

3. Wetsel, W., **Merchenthaler, I.**, Valenca, M., Liposits, Zs., López, F., Negro-Vilar, A.: New tools and approaches in molecular and cellular neuroendocrinology. *Proceedings of the Advanced Endocrinology Workshop in Intracellular Signalling and Cell-Cell Regulation, La Toja, Spain, 1992.*

4. Negro-Vilar, A., Wetsel, W., Valenca, M, **Merchenthaler, I.**, López, F., Liposits, Zs., Ching, M., Weiner, R. and Melon, P.: Cellular and molecular aspects of LHRH secretion and bioactivity. *Serono Symposium, Scottsdale, AR, 1992.*

*5.* **Merchenthaler, I.**, Liposits, Zs., López, F.J., Wetsel, W.C., Negro-Vilar, A.: Functional morphology of the GnRH neuronal system: connectivity and co-localization. *Proceedings of the Satellite Symposium on Gonadotropins, GnRH, GnRH Analogs and Gonadal Peptides. P. Bouchard, A. Caraty, H.J.T. Coelingh Bennink, S.N. Pavlou (eds) , Paris, France, Parthenon Publishing Group, London, pp.23-39, 1992 .*

6. Negro-Vilar, A., Wetsel, W, López, F.J., Valenca, M., Moretto, M., Liposits, Zs., **Merchenthaler, I.:** Novel concepts in the physiology of the LHRH pulse-generator. *Proceedings of the Satellite Symposium on Gonadotropins, GnRH, GnRH Analogs and Gonadal Peptides.. P. Bouchard, A. Caraty, H.J.T. Coelingh Bennink, S.N. Pavlou (eds), Paris, France, Parthenon Publishing Group, London, pp 39-53., 1992.*

7*.* Negro-Vilar, A., López, F.J., **Merchenthaler, I.,** Wetsel, W.: Steroid effects on LHRH cells. *Progress in Endocrinology. Proceedings of the 9th International Congress of Endocrinology. R. Mornex, C. Jaffiol and J. Lecler (eds). The Parthenon Publishing Group Inc., New York, pp.152-154, 1993.*

8. Daikoku, S., Hisano, S.S., **Merchenthaler, I.,** Sawchenko, P, Shioda, S., Silverman, A-J.: The endocrine hypothalamus. *106th Meeting of the American Association of Anatomists Held Jointly with The Japanese Association of Anatomists. San Diego, CA, 1993*

9. Negro-Vilar, A., Moretto, M., **Merchenthaler, I**., López, F.J.: Recent advances in the cellular and molecular biology of the luteinizing hormone-releasing hormone (LHRH) pulse generator. *Serono Symposium, Palma de Majorca, Spain, 1993.*

**Books edited:**

1. Neuropeptides and Peptide Analogs. M. Kovacs and I. Merchenthaler, I. (eds), *Research Signpost, Kerala, India, 2009.*

**Bookchapters***:*

1. **Merchenthaler, I.,** and Vigh S.: CRF and GHRH in the rat central nervous system. An immunocytochemical study. In Vizi, E.S., and Magyar, K. (eds) *Regulation of Transmission Function: Basic and Clinical Aspects, Part 1, Akademiai Kiado, Budapest, pp. 385‑388, 1984.*
2. Petrusz, P., **Merchenthaler, I.,** and Maderdrut, J.L.: Distribution of enkephalin‑containing neurons in the central nervous system. In Bjorklund, A., Hokfelt, T. (eds) *Handbook of Chemical Neuroanatomy, Vol. 4, Part I, GABA and Neuropeptides in the CNS: 273‑334, 1985.*
3. Stumpf, W.E., Sar, M., Jennes, L., **Merchenthaler, I.,** and Reiger, G.: Steroid hormone regulation of monoaminergic and peptidergic neurons. Histochemical evidence. In Kobayashi, H., Bern, H.A., and Urano, A. (eds) *Neurosecretion and Biology of Neuropeptides. Japan Scientific Press, Tokyo and Springer‑Verlag, New York, pp. 202‑209, 1985.*
4. Flerkó, B., **Merchenthaler, I.,** and Sétáló, G.T.: Short and ultrashort feedback control of gonadotropin secretion. In Leung P.C.X., Armstrong, D.T., Ruf, K.B., Moger, W.H., and Friesen, H.G. (eds.) *Endocrinology and Reproduction, Plenum Press, New York, pp. 37‑50, 1987.*
5. **Merchenthaler, I.,** Liposits, Z. and Gallyas, F. Silver intensification in immunocytochemistry. In Bullock, G.R. and Petrusz, P. (eds) *Techniques in Immunocytochemistry Vol. 4, Acad. Press, London, pp. 217-252, 1989.*
6. **Merchenthaler, I.,** and Lengvári, I.: Neuroendocrine control. In Pearson, J., Kopp, N., and Riederer, P. (eds) *An Introduction to Neurotransmitters in Health and Disease. Acad. Press, London, pp. 93-118, 1990*
7. Negro-Vilar, A., López, F.J., **Merchenthaler, I.,** Ching, M., Culler, M.D., Romanelli, F. and Wanderley, I.: Pituitary-testicular interactions: role of inhibin, steroids and intracellular messengers. In Fabbri, A. and Isidori, A. (eds) *Hormonal Communicating Events in the Testis. Raven Press, New York, 1991.*
8. Petrusz, P. and **Merchenthaler, I.**: The corticotropin-releasing factor system. In Nemeroff C.B. (ed) *Comprehensive Textbook of Neuroendocrinology. Section II: Anatomical Neuroendocrinology. CRC Press, Boca Raton, Florida, pp. 125-179, 1992.*
9. Negro-Vilar, A., López, F.J., Donoso, A., **Merchenthaler, I.,** Ching, M., Valenca, M.: Cellular and molecular mechanisms regulating LHRH release and gonadal function. *In: Fronteras en Endocrinologia. C. Dieguez, F.F. Casanueva (eds). Ediciones Diaz de Santos, S.A., Madrid, pp. 171-188, 1992.*
10. López, F.J., **Merchenthaler, I.,** Liposits, Zs., Moretto, M., Meade, E.H., Negro-Vilar, A.: Galanin: a hypothalamic hypophysiotropic hormone. *Progress in Endocrinology. Proceedings of the 9th International Congress of Endocrinology. R. Mornex, C. Jaffiol and J. Lecler (eds). The Parthenon Publishing Group Inc., New York, pp. 143-146, 1993.*
11. **Merchenthaler, I.,** López, F.J., Negro-Vilar, A.: The synthesis of galanin and LHRH is sex steroid dependent. The role of galanin in the regulation of LH secretion. *Current Topics in Andrology. H. Oshima & HG Burger (Eds). Japan Society of Andrology, pp. 13-19, 1993.*
12. **Merchenthaler, I** : Functional morphology of hypophysiotropic factors: identification, connectivity and plasticity. *Principles of Medical Biology.* *Molecular and Cellular Endocrinology. E. Bittar and N. Bittar (eds), JAI Press, Inc., Greenwich, CT, pp. 119-142, 1997.*
13. Wetsel., W.C., **Merchenthaler, I**., Liposits, Zs.: Functional morphology of the immortalized hypothalamic LHRH neurons. *In: Methods in Neuroendocrinology. The Cellular and Molecular Pharmacology Series, L. Van de Kar (ed), CRC Press, Boca Raton, FL., 1998.*
14. **Merchenthaler, I**. and Shughrue, P.J. Estrogen receptor alpha vs beta: new estrogen responsive tissues and new potentials for HRT. *In: Biology of Menopause.* Serono Series, Springer, pp.259-272, 2000.

15. Dudas, B. and **Merchenthaler, I**.: Peptidergic afferents of luteinizing hormne-releasign hormone (LHRH)-synthesizing neurosn in the human brain. *In: Neuropeptides and Peptide Analogs. M. Kovacs and I. Merchenthaler, I. (eds), Research Signpost, Kerala, India, pp.1-32, 2009.*

16. **Merchenthaler, I**.: Galanin and the neuroendocrine axis. *In: Galanin. Hokfelt, T. (ed), Springer, Basel, pp.71-86, 2010.*

17. **Merchenthaler, I.**: The Aging Hypothalmaus. In: The Human Hypothalamus: Anatomy, Funnctinos, and Disorders**.** *B. Dudas (ed). Nova Science Publishers, Inc., Hauppauge, NY, In press.*

18. Dudas, B. and **Merchenthaler, I.:** Morphology and distribution of hypothalamic Peptidergic systems. In: The Human Hypothalamus: Anatomy, Funnctinos, and Disorders**.** B. Dudas (ed). *Nova Science Publishers, Inc., Hauppauge, NY, 2013.*

19. Dudas, B. and **Merchenthaler, I**.: Catecholamines in the human hypothalamus. In: The Human Hypothalamus: Anatomy, Funnctinos, and Disorders**.** B. Dudas (ed). *Nova Science Publishers, Inc., Hauppauge, NY, 2013.*

20. Dudas, B. and **Merchenthaler, I**.: Regulation of gonadal functions in the human hypothalamus: inputs of the gonadotropin-releasing hormone (GnRH) system. In: The Human Hypothalamus: Anatomy, Funnctinos, and Disorders**.** B. Dudas (ed). *Nova Science Publishers, Inc., Hauppauge, NY, 2013.*

21. Dudas, B. and **Merchenthaler, I**.: Hypothalamic regulation of growth. In: The Human Hypothalamus: Anatomy, Funnctinos, and Disorders**.** B. Dudas (ed). *Nova Science Publishers, Inc., Hauppauge, NY, 2013.*

22. Dudas, B. and **Merchenthaler, I.:** Cetecholaminergic regulation of the hypothalamic neuropeptide Y (NPY) and galanin systems. Chapter 3. The Catechooaminergic System of the Human Brain. Ed; B. Dudas, Nova Science Publishers, Inc. Hauppauge, NY, 2014

23. Dudas, B., and **Merchenthaler, I.**: Stress and gonadal functions: the role of catecholamines. Chapter 4. The Catechooaminergic System of the Human Brain. Ed; B. Dudas, *Nova Science Publishers, Inc., Hauppauge, NY, 2014.*

24. Dudas, B. and **Merchenthaler, I**.: central catecholamin4egic regulation of growth. Chapeter 5. The Catechooaminergic System of the Human Brain. Ed; B. Dudas, *Nova Science Publishers, Inc., Hauppauge, NY, 2014.*

25. Dudas, B. and **Merchenthaler, I.:** catecholaminergic regulation of the magocellular neurosecretory system. Chapter 6. The Catechooaminergic System of the Human Brain. Ed; B. Dudas, *Nova Science Publishers, Inc., Hauppauge, NY, 2014.*

26. Merchenthaler, I. Estrogens. *Encyclopedia of Reproduction, 2018.*

27. Dudas, B., Merchenthasler, I.: Morphology and distribution of hypothalamic peptidergic systems. *Handbook of Clinical Neurology, In: The Human Hypothalamus, Vol 179, Elsevier, 2021.*

# Major Invited Speeches

1. Corticotropin releasing factor (CRF)-immunoreactive structures in the central nervous system of the rat. Minisymposium, Dallas, TX, 1983.

2. Silver intensification in immunocytochemistry: localization of LHRH and CRF in the rat brain. Tulane University, Medical Center, New Orleans, 1983.

3. CRF and GRF systems of the rat brain. European Society for Neuroscience, Budapest, Hungary, 1984.

4. Hypophysiotropic neuronal systems in the rat brain. Semmelweis Medical School, Budapest, Hungary, 1984.

5. Immunocytochemical localization of classical hypophysiotropic hormones in the rat central nervous system. Brain Research Institute Seminar, UCLA, CA, 1986.

6. Proenkephalin-derived peptides in the rat brain: Immunocytochemical localization. Department of Anatomy, University of California, Irvine, CA, 1986.

7. New data n the localization of CRF, GRF, and TRH in the rat central nervous system. U.S.-Japan, Biomedical Research Center, Tulane University, New Orleans, 1986.

8. Hypothalamic hypophysiotropic neuronal systems: morphological studies. The Salk Institute, La Jolla, CA, 1986.

1. Hypophysiotropic neuropeptides in the rat brain. European Society for Comparative

Endocrinology, Belgrad, Yugoslavia, 1986.

10. Metorphamide‑like immunoreactivity in the rat brain. Colocalization with a‑MSH. Satellite Symposium of the Second World Congress of Neuroscience, Budapest, Hungary, 1987.

11. Classical releasing hormones. Origin and pathways, Second World Congress of Neuroscience, Budapest, Hungary, 1987.

12. Classical hypophysiotropic hormone-containing perikarya and pathways in the rat brain. University of Missouri-Columbia, Missouri, 1987.

13. New data on the localization of hypophysiotropic neuronal systems in the rat brain. LMIN, NIEHS, NIH, Research Triangle Park, N.C., 1987.

14. Hypothalamic LHRH-and galanin neurons controlled by ovarian steroids. Research Institute of Scripps Clinic, San Diego, CA, 1991.

15. Ujabb adatok a hypophysis elülsö lebenye müködésének szabályozásában résztvevö hypothalamikus neuronrendszerek morfologiájahoz. Hungarian Academy of Sciences, Budapest, 1992.

16. Hypophysiotroph neuronrendszerek in vivo and in vitro morfologiai vizsgálata. University of Pecs, Medical School, Pecs, Hungary, 1992.

17. Functional morphology of the GnRH neuronal system. Symposium on Gonadotropins, GnRH, GnRH Analogs and Gonadal Peptides. A Satellite Symposium of the IXth International Congress of Endocrinology. Paris, France, 1992.

18. Hypophysiotropic neurons: identification, colocalization, and plasticity. Neuroscience Colloquium at Florida State University, Tallahassee, Florida, 1992.

19. Hypophysiotropic neurons: identification, colocalization, and plasticity. Greater New Orleans Chapter for Neuroscience, Tulane University, New Orleans, 1992.

20. Identification of hypophysiotropic neurons by a combination of retrograde labeling and immunocytochemistry. 106th Ann. Meeting of the American and Japanese Association of Anatomists, San Diego, CA, 1993.

21. The endocrine hypothalamus. 106th Ann. Meeting of the American and Japanese Association of Anatomists, San Diego, CA, 1993.

22. The colocalization of galanin and LHRH is estradiol and progesterone dependent. The role of galanin in the regulation of gonadotropin secretion. 5th International Congress of Andrology. Tokyo, Japan, 1993.

23. Plasticity of retrogradely labeled hypophysiotropic neurons. The effect of the endocrine background on the colocalization of neuropeptides and neurotransmitters. Karolinska Institute, Stockholm, Sweden, 1993.

24. Colocalization of neuropeptides and neurotransmitters in retrogradely identified hypophysiotropic neurons. National Institute of Health, Bethesda, 1993.

25. Colocalization of neuropeptides and neurotransmitters in retrogradely identified hypophysiotropic neurons; LHRH/galanin and enkephalin/dopamine. Department of Physiology, University of Pittsburgh, PA, 1996.

26. Colocalization of neuropeptides and neurotransmitters in retrogradely identified hypophysiotropic neurons; LHRH/galanin and enkephalin/dopamine. Wisconsin Regional Primate Research Center, Madison, WI, 1996.

27. ER-beta: a newly discovered estrogen receptor. Tissue distribution of its mRNA. Department of Anatomy, Albert Szent-Gyorgyi Medical University, Szeged, Hungary, 1997.

1. Tissue distribution of ER-a vs ER-b mRNAs in rodents. Department of Obstetrics & Gynecology, Yale University, New Haven, CT, 1997.

29. ER-alpha vs ER-beta: tissue distribution and regulation in rodents. Brain Research Institute, University of California at Los Angeles, Los Angeles, CA, 1998.

30. ER-alpha vs ER-beta: Who will win? Symposium presentation, Annual Meeting of the Endocrine Society, New Orleans, 1998.

31. LHRH and sexual dimorphism. Symposium presentation, Galanin: Basic Research Discoveries and Therapeutic Implications. Stockholm, Sweden, 1998.

32. ER-alpha vs ER-beta Distribution of their mRNA in estrogen targets. Department of Physiology, University of Kentucky, Lexington, KY, 1998.

33. ER-alpha vs ER-beta: tissue distribution and regulation in rodents. Karolinska Institute, Stockholm, Sweden, 1998.

1. ER-alpha vs ER-beta: New estrogen responsive tissues and new potentials for HRT. Int. Symposium on Biology of Menopause. Serono Symposia USA. Newport Beach, CA 1998

35. Comparative distribution of ER-α and ER-β mRNAs in rodents. Temple University, Philadelphia, PA, 1998.

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5. Localization and functional role of the α and β estrogen receptors in the neuroendocrine systems. "Past, Present, and Future in Neuroendocrinology. International Semmelweis Symposium, Budapest, Hungary, 1999.
6. Functional morphology of the α and β estrogen receptors in the neuroendocrine systems. Annual Meeting of the Hungarian Endocrine Society. Lillafured, Hungary, 2000.
7. Estrogen in the treatment of ischemic CNS injury. First International Pannonian Symposium on CNS injury. Pecs, Hungary, 2000.
8. Functional morphology of estrogen receptors. International Symposium on Tissue Selective Estrogen Action. Pannon Symposium, Pecs, Hungary, 2000.
9. Functional morphology of estrogen receptors. International Symposium on Signal Transduction in Health and Disease (STADY II), Tel Aviv. Israel, 2000.
10. Functional morphology of estrogen receptors. First World Congress on Women's Mental Health, Berlin, Germany, 2001.
11. Neuroprotection by estrogen: the role of ER alpha and ER beta. FENS and IBRO International Summer School,: "Receptor Activation and Beyond", Sulejow, Poland, 2001.
12. Identification of estrogen receptor-β in GnRH neurons of the rodent hypothalamus. 7th Int. Symp. On GnRH Analogues in Cancer and Human Reproduction. Amsterdam, The Netherlands, 2003.
13. Direct and indirect actions of estrogen on LHRH neurons: morphological correlates. The Netherlands Institute for Brain Research, Amsterdam, The Netherlands, 2003.
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12. Neuroprotection with estrogen in animal models of focal and global ischemia. University of Southern California, Los Angeles, CA, 2006.
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14. Estrogen receptor-beta in the central nevous system. Annual Meeting of the American Chemical Society, Chicago, IL, 2007.
15. The Good, the Bad, and the Ugly” Divergent aspects of gonadal steroids on models of neurologic disease. ISSWSH 2007 “The Four Seasons” (of a Woman’s Sexuality). Orlando, FL, 2007.
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17. Prodrug of estrogen alleviates symptoms of menopause (hot flushes, depression, and neuronal cell death) in animal models without exhibiting uterotrophic activity. Annual Meeting of the American Menopause Society, San Diego, CA, 2009.
18. Use of pro-estrogen to treat menopausal sympptoms. OSSD, Baltimore, 2011.
19. A novel pro-drug approach to treat menopausal symptoms. Elan Pharmaceuticals, San Francisco, 2012.
20. CNS-selective estrogen therapy: utopia or possibility. Seminar. Department of Basic MedicalScinces, College of Medicine, Phoenix, AZ, 2013.
21. Development of CNS-selective estrogen therapy for meno-and andropausal symptoms. University of Maryland Estern Shore, Salisbury, MD, 2015.
22. Development of brain-seolective estrogen therapy for meno- and andropausal symptoms, Global Summit on Steroids 2015, Baltimore, 2015.
23. Be in the right time in the right place. Europen Society of Neuroscience, Satellite Symposium,

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