

CURRICULUM VITAE

Personal Data

Name: Gabriela Hurtado Alvarado

Highest scientific degree: Doctor in Experimental Biology (PhD)

Contact details

Email: hual.g313@gmail.com; hurtadoalvg@comunidad.unam.mx

ORCID: <https://orcid.org/0000-0002-6137-663X>

Research Gate link <https://www.researchgate.net/profile/Gabriela-Hurtado-Alvarado>

Scientific degrees

2011: Bachelor's degree in Experimental Biology, Universidad Autónoma Metropolitana, Unidad Iztapalapa. Mexico City, Mexico.

2013: Master in Experimental Biology, Universidad Autónoma Metropolitana, Unidad Iztapalapa. Mexico City, Mexico.

2017: PhD, Doctorate in Experimental Biology, Universidad Autónoma Metropolitana, Unidad Iztapalapa. Mexico City, Mexico. Thesis entitled "Participation of inflammatory mediators in the structural and functional alteration of the blood-brain barrier induced by sleep restriction".

Postdoctoral positions

- 2018-2019 Laboratory of Hypothalamic Integration Mechanisms, Instituto de Investigaciones Biomedicas, Universidad Nacional Autónoma de México. Mexico City. Grant Frontera 1802. "An approach from optogenetics and chemogenetics to investigate the mechanisms that trigger the development of metabolic diseases"
- 2019-2021: CONACYT 279293 QUEBEC. "The biological clock grants temporality to the access of energy signals to the arcuate nucleus: its role in the development of type 2 diabetes"

- 2021-2022: DGAPA. “Sleep deficiency induces metabolic alterations through changes in the blood-hypothalamic barrier: The participation of the biological clock”

Grants and Awards

- Member of the National Researcher System Level 1, since 2019
- July 2022. L’Oréal-UNESCO-AMC 2022 Women in Science Fellowship Award. Project “Delaying the onset of the sleep phase alters glucose metabolism: the role of the biological clock.”
- Funding of Project IA202725, Programa de Apoyo a Proyectos de Investigación e Innovación Tecnológica PAPIIT 2025. “The impact of sleep restriction on the circadian regulation of brain barriers creates a communication problem between the periphery and the brain, increasing the risk of developing metabolic diseases.”
- IBRO Rising Stars 2025. International Brain Research Organization.

Scientific study abroad

- 2016, March-June. CONACyT Mixed Scholarship for a 3-month stay at the Laboratory of Molecular Neurobiology, Institute of Biophysics Biological Research Center of the Hungarian Academy of Sciences in Szeged, Hungary led by Dr. Mária Deli.
- 2017 December-February. Collaboration Stay (2 months) at the Laboratory of Molecular Neurobiology, Institute of Biophysics Biological Research Center of the Hungarian Academy of Sciences in Szeged, Hungary led by Dr. Mária Deli. Project “Adenosine enhances Blood-brain barrier integrity, a study on culture and animal models”
- April 2023. 3-week Visiting Researcher at the Sleep and Performance Research Center at Washington State University, Spokane, USA.

Employment

- 2016-2017. Research Assistant at Neuroscience Area, Department of Reproductive Biology. Autonomous Metropolitan University, Iztapalapa. Economic Number 40635.

- 2024-Full-time Associate Professor C in the Department of Anatomy at the Faculty of Medicine. Economic number 910085.

Thesis topic supervisor

Number of master students supervised until now: 2

“Identification of neuro-immuno-endocrine alterations and their association with alterations in the permeability of brain barriers in children with obesity”. Universidad Autónoma Metropolitana, Mexico. Concluded

“Alterations in the junctions between brain endothelial cells and pericytes during chronic sleep restriction”. Universidad Autónoma Metropolitana, Mexico. Concluded

Number of PhD students currently supervised: 3

“Characterization of cellular and molecular changes in cerebral pericytes during chronic sleep restriction”. Universidad Autónoma Metropolitana, Mexico. Concluded

“Blood-brain barrier and Sleep loss, adenosine and TNF alfa” Neuroscience Program. Graduate School Washington State University, Spokane, USA. In process.

“Regulatory effect of caffeine on the blood-brain barrier of premature infants with central apnea” Universidad Autónoma Metropolitana, Mexico. In process

Research area: Blood-brain barrier, blood-hypothalamus barrier, tanycytes, sleep restriction, suprachiasmatic nucleus, physiological glucose, and insulin regulation.

Research field: Biology, Neuroscience, Neuroendocrinology

Publications

1. Gómez-González B, Domínguez-Salazar E, **Hurtado-Alvarado G**, Esqueda-León E, Santana-Miranda R, Rojas-Zamorano JA, Velázquez-Moctezuma J. Role of sleep in the regulation of the immune system and the pituitary hormones. Ann N Y Acad Sci. 1261:97-106. **2012**. Impact factor **4.728**.
2. Gómez-González B, **Hurtado-Alvarado G***, Esqueda-León E, Santana-Miranda R, Rojas-Zamorano JÁ, Velázquez-Moctezuma J. REM sleep loss and recovery regulates blood-brain barrier function. Curr Neurovasc Res. 10(3):197-207. **2013**;. ***First authorship shared**. Impact factor **2.481**.
3. **Hurtado-Alvarado G**, Pavón L, Castillo-García SA, Hernández ME, Domínguez-Salazar E, Velázquez-Moctezuma J, Gómez-González B. Sleep loss as

a factor to induce cellular and molecular inflammatory variations. Clin Dev Immunol. 2013;2013:801341. **2013**. Impact factor **2.763**.

4. **Hurtado-Alvarado G**, Cabañas-Morales AM, Gómez-González B. Pericytes: brain- immune interface modulators. Front Integr Neurosci. 2014 Jan 10;7:80. doi: 10.3389/fnint.2013.00080. eCollection **2014**. Impact factor **4.6**

5. Arreola R, Becerril-Villanueva E, Cruz-Fuentes C, Velasco-Velázquez MA, Garcés- Alvarez ME, **Hurtado-Alvarado G**, Quintero-Fabian S, Pavón L. Immunomodulatory effects mediated by serotonin. J Immunol Res. 2015;2015:354957. **2015**. Impact factor **4.818**.

6. **Hurtado-Alvarado G**, Domínguez-Salazar E, Pavon L, Velázquez- Moctezuma J, Gómez-González B. Blood-Brain Barrier Disruption Induced by Chronic Sleep Loss: Low-Grade Inflammation May Be the Link. J Immunol Res. 2016;2016:4576012. **2016**. Impact factor **4.818**.

7. Arreola R, Alvarez-Herrera S, Pérez-Sánchez G, Becerril-Villanueva E, Cruz-Fuentes C, Flores-Gutierrez EO, Garcés-Alvarez ME, de la Cruz-Aguilera DL, Medina-Rivero E, **Hurtado-Alvarado G**, Quintero-Fabián S, Pavón L. Immunomodulatory Effects Mediated by Dopamine. J Immunol Res. 2016;2016:3160486. 2016. Impact factor **4.818**.

8. **Hurtado-Alvarado G**, Domínguez-Salazar E, Velázquez-Moctezuma J, Gómez- González B. A2A Adenosine Receptor Antagonism Reverts the Blood-Brain Barrier Dysfunction Induced by Sleep Restriction. PLoS One. 28;11(11):e0167236. 2016. Impact factor **3.24**.

9. **Hurtado-Alvarado G**, Velázquez-Moctezuma J, Gómez-González B. Chronic sleep restriction disrupts interendothelial junctions in the hippocampus and increases blood- brain barrier permeability. J Microsc. 268(1):28-38. **2017**. Impact factor **1.758**.

10. **Hurtado-Alvarado G**, Becerril-Villanueva E, Contis-Montes de Oca A, Domínguez- Salazar E, Salinas-Jazmín N, Pérez-Tapia SM, Pavon L, Velázquez-Moctezuma J, Gómez-González B. The yin/yang of inflammatory status: Blood-brain barrier regulation during sleep. Brain Behav Immun. **2018**. Impact factor **7.217**.

11. Nachón-García F, **Hurtado-Alvarado G**, Acosta-Hernández ME, Peña-Escudero C, Priego-Fernández S, Alvarez-Herrera S, Becerril-Villanueva E, Pérez-Sánchez G, Pavón L, García-García F. Characterization of sleep- pattern and neuro-immune-endocrine markers at 24 hour post-injection of a single low dose of lipopolysaccharide in male Wistar rats. J Neuroimmunol. **2018**. Impact factor **3.478**

12. Pérez-Morales M, **Hurtado-Alvarado G**, Morales-Hernández I, Gómez-González B, Domínguez-Salazar E, Velázquez-Moctezuma J. Postnatal overnutrition alters the orexigenic effects of melanin-concentrating hormone (MCH) and reduces MCHR1 hypothalamic expression on spontaneous feeding and fasting. *Pharmacol Biochem Behav.* 2018. Impact factor **3.31**
13. Domínguez-Salazar E, **Hurtado-Alvarado G***, Medina-Flores F, Dorantes J, González-Flores O, Contis-Montes de Oca A, Velázquez-Moctezuma J, Gómez-González B. Chronic sleep loss disrupts blood-testis and blood- epididymis barriers, and reduces male fertility. *J Sleep Res.* **2020**. ***First authorship shared..** Impact factor **3.981**
14. Alvarez-Herrera S, Escamilla R, Medina-Contreras O, Saracco R, Flores Y, **Hurtado-Alvarado G**, Maldonado-García JL, Becerril-Villanueva E, Pérez- Sánchez G, Pavón L. Immunoendocrine Peripheral Effects Induced by Atypical Antipsychotics. *Front Endocrinol (Lausanne)* 21;11:195. **2020**. Impact factor **5.555**
15. Medina-Flores F, **Hurtado-Alvarado G**, Gómez-González B. Selective Regional Isolation of Brain Microvessels. *Methods Mol Biol.* **2020**. Impact Factor **1.17**.
16. Medina-Flores F, **Hurtado-Alvarado G**, Contis-Montes de Oca A, López-Cervantes SP, Konigsberg M, Deli MA, Gómez-González B. Sleep loss disrupts pericyte-brain endothelial cell interactions impairing blood-brain barrier function. *Brain Behav Immun.* **2020**. 89:118-132. Impact factor **7.217**
17. Dorantes-Barrios CJ, Domínguez-Salazar E, Gonzalez-Flores O, Cortés-Barberena E, **Hurtado-Alvarado G**. Behavioral consequences of postnatal undernutrition and enriched environment during later life. *Physiol Behav.* 1;241. **2021**. Impact Factor **3.244**
18. Buijs RM, **Hurtado-Alvarado G**, Soto-Tinoco E. Vasopressin: An output signal from the suprachiasmatic nucleus to prepare physiology and behaviour for the resting phase. *J Neuroendocrinol.* 33(7):e12998. **2021**. Impact Factor **3.627**
19. García-Aviles JE, Méndez-Hernández R, Guzmán-Ruiz MA, Cruz M, Guerrero-Vargas NN, Velázquez-Moctezuma J, **Hurtado-Alvarado G***. Metabolic Disturbances Induced by Sleep Restriction as Potential Triggers for Alzheimer's Disease. *Front Integr Neurosci.* **2021**. ***Corresponding author.** Impact Factor **2.76**
20. Rodríguez-Cortés B, **Hurtado-Alvarado G***, Martínez-Gómez R, León-Mercado L, Prager-Khoutorsky M, Buijs RM. Suprachiasmatic nucleus- mediated

glucose entry into the arcuate nucleus determines the daily rhythm in blood glycemia. *Current Biology*. **2022**. ***First authorship shared**. Impact Factor **10.834**

21. Medina-Flores F, Hurtado-Alvarado G, Deli MA, Gómez-González B. The Active Role of Pericytes During Neuroinflammation in the Adult Brain. *Cell Mol Neurobiol*. **2022**. Impact Factor **3.37**

22. Becerril-Villanueva E, Hurtado-Alvarado G. Development of anxiolytic and depression-like behavior in mice infected with *Mycobacterium lepraemurium*. *Neuroscience*. **2022**. Impact Factor **3.590**

23. Guzmán-Ruiz MA, Guerrero-Vargas NN, Lagunes-Cruz A, González-González S, García-Aviles JE, **Hurtado-Alvarado G**, Mendez-Hernández R, Chavarría-Krauser A, Morin JP, Arriaga-Avila V, Buijs RM, Guevara-Guzmán R. Circadian modulation of microglial physiological processes and immune responses. *Glia*. **2023** Feb;71(2):155-167. Impact factor **5.4**

24. Méndez-Hernández R, Rumanova VS, Guzmán-Ruiz MA, Foppen E, Moreno-Morton R, **Hurtado-Alvarado G**, Escobar C, Kalsbeek A, Buijs RM. Minor Changes in Daily Rhythms Induced by a Skeleton Photoperiod Are Associated with Increased Adiposity and Glucose Intolerance. *Adv Biol (Weinh)*. 2023 Nov;7(11):e2200116. Impact factor **3.2**

25. **Hurtado-Alvarado G**, Soto-Tinoco E, Santacruz-Martínez E, Prager-Khoutorsky M, Escobar C, Buijs RM. Suprachiasmatic nucleus promotes hyperglycemia induced by sleep delay. *Curr Biol*. **2023** Oct 23;33(20):4343-4352.e4. Impact Factor **10.834**

26. Maldonado-García JL, Alvarez-Herrera S, Pérez-Sánchez G, Becerril-Villanueva E, Pavón L, Tesoro-Cruz E, Girón-Pérez MI, **Hurtado-Alvarado G**, Impact Factor **4.3** Damián-Morales G, López-Santiago R, Moreno-Lafont MC. Concomitant Treatment with Doxycycline and Rifampicin in Balb/c Mice Infected with *Brucella abortus* 2308 Fails to Reduce Inflammation and Motor Disability. *Pharmaceuticals (Basel)*. **2024** May 15;17(5):638. Impact Factor **4.3**

27. Avila-Soto K, Mendez-Hernandez R, Salazar-Juárez A, Espinoza-Rojó M, Escobar C, Vazquez-Moreno M, Cruz M, **Hurtado-Alvarado G**. Serum S100 β and Neuron Specific Enolase correlate with obesity parameters in Mexican children. **2025**. *International Journal of Obesity*. Accepted. Impact Factor **4.2**

H-index scopus 17 <https://www.scopus.com/authid/detail.uri?authorId=55318051800>
1110 citations by 963 documents

Book chapters

1. Gómez-González B, **Hurtado-Alvarado G**, Velázquez-Moctezuma J. 2012. Local and temporal regulation of the blood-brain barrier during normal and altered physiological states. En: Montenegro PA, Juárez SM (Ed.). Blood-brain barrier. New Research. USA: Nova Publisher, pp. 1-42 (ISBN: 978-1-62100-766-1).
2. Gómez-González B, Cabañas Morales Adrian M., **Hurtado-Alvarado G**, Velázquez- Moctezuma. 2014. Neuronal-Glial-Endothelial interactions Regulate central nervous system homeostasis. En: Melendez Herrera E, Philips-Farfán B, Gutiérrez-Ospina G (Ed). Endothelial cell plasticity in the normal and injured entral nervous system. CRC Press, pp. 36-75 (ISBN: 978- 1-4665-9921-5)
3. Buijs RM, Soto Tinoco EC, **Hurtado Alvarado G**, Escobar C. The circadian system: From clocks to physiology. En Handb Clin Neurol. 2021; 179:233-247 Volumen 179. Elsevier. Pp. 233-247. (ISBN: 978-0-12-819975-6).

International presentations: 8

Languages

Spanish (native)

English (B2)

Updated date 04/11/2025