CURRICULUM VITAE

Carlos González Fernández, Ph.D.

Personal Information:

Birthdate: 22th of January, 1985.
Citizenship: Spanish.
Languages: Fluent in Spanish, English intermediate.

Present Address: Laboratory of Molecular Neurology.
HNP Research Unit.
Hospital Nacional de Parapléjicos.
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Education and Academic Degrees:

2008: Degree in Biology (Field of Health Biology), Universidad Complutense de Madrid (UCM).

2011: Master in Biochemistry, Molecular Biology and Biomedicine, Universidad Complutense de Madrid (UCM). "Excellent" for the research work entitled: "*Caracterización del patrón de expresión de la familia de proteínas Wnt en ratones adultos tras una lesión medular de tipo hemisección*". Advisor: Dr. Francisco Javier Rodríguez Muñoz.

2015: Ph.D. in Biochemistry, Molecular Biology and Biomedicine; Universidad Complutense de Madrid (UCM). Thesis entitled: "*Caracterización del patrón de expresión de la familia de proteínas Wnt en la lesión medular*". Advisor: Dr. Francisco Javier Rodríguez Muñoz.

Specialization courses:

1. Course of Fluorescence and Confocal Microscopy (16 hours). Hospital Nacional de Parapléjicos, Toledo (Spain) 2010.

2. Course of Introduction to Flow Cytometry (16 hours). Hospital Nacional de Parapléjicos, Toledo (Spain) 2011.

3. International Spinal Cord Meeting. Bellvitge Hospital, Barcelona (Spain) 2011.

4. Course of Animal Handling for Research Personnel (Category B). Hospital Nacional de Parapléjicos, Toledo (Spain) 2012.

5. Course of Animal Handling for Research Personnel (Category C). Hospital Nacional de Parapléjicos, Toledo (Spain) 2014.

6. Course of Introduction to Proteomics (25 hours). Hospital Nacional de Parapléjicos, Toledo (Spain) 2016.

7. Course of Research methodology in health sciences (20 hours). Hospital Nacional de Parapléjicos, Toledo (Spain) 2017.

8. Course of Bibliographic management with MENDELEY (11 hours). Gerencia de Atención Integrada de Albacete (Spain) 2019.

9. Course of Statistic in research (25 hours). Hospital Nacional de Parapléjicos, Toledo (Spain) 2019.

Positions:

2007: Collaborating student at the Laboratory of Molecular Neurology of the Hospital Nacional de Parapléjicos, Toledo (Spain).

2008-2010: Collaborating Technical Researcher at the Laboratory of Molecular Neurology of the Hospital Nacional de Parapléjicos, Toledo (Spain).

2010-2011: Master student at the Laboratory of Molecular Neurology of the Hospital Nacional de Parapléjicos, Toledo (Spain).

2011-2015: Ph.D. student at the Laboratory of Molecular Neurology of the Hospital Nacional de Parapléjicos, Toledo (Spain).

From 2015: Postdoctoral Researcher at the Laboratory of Molecular Neurology of Hospital Nacional de Parapléjicos, Toledo, (Spain).

Fellowships:

2010-2013: Predoctoral Student Fellowship (Ayuda para perfeccionamiento y movilidad de investigadores en el campo de la salud) from Fundación para la Investigación Sanitaria en Castilla-La Mancha (FISCAM).

2018-2020: Postdoctoral Fellowship (Ayuda para la incorporación de personal investigador en el campo de la salud; ayudas para investigadores doctores) from Fundación del Hospital Nacional de Parapléjicos.

2021-2022 Postdoctoral Fellowship (Ayuda para la incorporación de personal investigador en el campo de la salud) from Fundación del Hospital Nacional de Parapléjicos.

Member of the following Societies:

Spanish Society of Neuroscience (SENC).

Ad hoc reviewer in the last years:

For Journals including: *Neural Regeneration Research*
Cells

Research Grants and Projects:

2013-2015: Spanish Ministry of Health, Program "Fondo de Investigaciones Sanitarias" (FIS). Project: *The Wnt family of proteins in the inflammatory and glial response after spinal cord injury: a new therapeutic target?* Principal Investigator: Dr. F. Javier Rodríguez. Role: PhD student.

2013-2017: European Comission, NMP Program. Project: NEURIMP: *Novel Combination of biopolymers and manufacturing technologies for production of a peripheral nerve implant containing an internal aligned channels array*. Principal Investigator: TEKNIKER (Coordinator of a consortium of 8 partners). Role: Postdoctoral Researcher.

2019-2023: Ministry of Science, Innovation and Universities, Program "Retos Investigación". Project: *WINSPIRE: Development of a therapy based in selective activation of the Wnt canonical signaling pathway for the treatment of acute spinal cord injury*. Principal Investigator: Dr. F. Javier Rodríguez. Role: Postdoctoral Researcher.

2019-2021: Spanish Ministry of Health, Institute of Health Carlos III for Technological Development in Health. Project: *SCI-IMMUNOPROTECT: Acute Spinal Cord Injury: Immunomodulation and Neuroprotection by means of Elastin-Like Recombinamers and Wnt Canonical Signaling Trigger*. Principal Investigator: Dr. F. Javier Rodríguez. Role: Postdoctoral Researcher.

2020-2022: Counselling of Education, Culture and Sports of the Regional Government of the "Junta de Comunidades de Castilla-La Mancha". Project: *SCI-WINTHERAPY: Acute treatment of spinal cord injury by combined therapy with elastin hydrogels and recombinant activating proteins of the canonical Wnt pathway*. Principal Investigators: Dr. F. Javier Rodríguez and Pau H. González. Role: Postdoctoral Researcher.

Publication List:

1. Fernandez-Martos CM, **Gonzalez-Fernandez C**, Gonzalez P, Maqueda A, Arenas A, Rodriguez FJ. *Differential expression of Wnts after Spinal Cord Contusion Injury in adult rats*. PLoS One 2011;6(11):e27000.

2. Gonzalez P, Fernandez-Martos CM, **Gonzalez-Fernandez C**, Arenas E, Rodriguez FJ. *Spatio-Temporal Expression Pattern of Frizzled Receptors after Contusive Spinal Cord Injury in Adult Rats*. PLoS One 2012; 7(12): e50793.

3. **Gonzalez-Fernandez C**, Fernández-Martos CM, Arenas E, Rodríguez FJ. *Wnts are expressed in the spinal cord of adult mice and are differentially induced after injury*. J Neurotrauma 2014; 31(6):565-81.

4. **Gonzalez-Fernandez C**, Mancuso R, Del Valle J, Navarro X, Rodríguez FJ. *Wnt Signaling Alteration in the Spinal Cord of Amyotrophic Lateral Sclerosis Transgenic Mice: Special Focus on Frizzled-5 Cellular Expression Pattern*. PLoS One. 2016; 11(5):e0155867.

5. **Gonzalez-Fernandez C**, Arevalo-Martin A, Paniagua-Torija B, Ferrer I, Rodriguez FJ, Daniel Garcia-Ovejero. *Wnts are expressed in the ependymal region of the adult spinal cord*. Mol Neurobiol (2017); 54(8):6342.

6. **González-Fernandez C**, González P, Andrés-Benito P, Ferrer I, Rodríguez FJ. *Wnt signaling alterations in the human spinal cord of amyotrophic lateral sclerosis cases: spotlight on Fz2, Fz5 and Wnt5a*. Mol Neurobiol (2019), 56(10):6777-6791.

7. González P, **González-Fernández C**, Rodríguez FJ. *Spatio-temporal and cellular expression pattern of PTK7 in the healthy rat and human spinal cord and after traumatic spinal cord injury in the rat*. Cell Mol Neurobiol (2020), 40(7):1087-1103. doi: 10.1007/s10571-020-00794-6.

8. González P[*], **González-Fernández C**[*], Campos-Martín Y, Mollejo M, Carballosa-Gautam M, Marcillo A, Norenberg M, Rodríguez FJ. *Frizzled 1 and Wnt1 as new potential therapeutic targets in the traumatically injured spinal cord*. [*]Co-first authors. Cell Mol Life Sci (2020), 77(22):4631-4662. doi: 10.1007/s00018-019-03427-4.

9. **González-Fernández C**[*], González P, Rodríguez FJ[*]. New insights into Wnt signaling alterations in amyotrophic lateral sclerosis: a potential therapeutic target? [*]Co-corresponding authors. Neural Regen Res (2020), 15(9):1580-1589.

10. González P*, **González-Fernández C***, RodríguezFJ. *Effects of Wnt5a Overexpression on Spinal Cord Injury*. (* Co-first authors). Journal of Cellular and Molecular Medicine, In Press. Doi: 10.1111/jcmm.16507.

Congress presentations:

1. Maqueda, A., Shields Shannon., Fernández Elisa., Vázquez Sandra., Fernández Carmen Mª, **González Carlos**, Pérez Virginia., Ernest Arenas y Fco Javier Rodriguez. *El trasplante de precursores neurales c17.2 que sobreproducen Wnt1 da lugar a una mejora en la función locomotora en ratas Wistar tras una lesión medular tipo contusión* (Poster). Congress: "XIII Congreso Nacional Sociedad Española de Neurociencia" Tarragona (Spain) 2009.

2. Shields S, Fernandez-Nuñez E, Fernandez-Martos CM, **Gonzalez-Fernández C**, Maqueda A, Vazquez S, Perez V, Rodriguez FJ. *La vía de señalización canónica inducida por Wnts está constitutivamente activa en neuronas del asta dorsal de médula espinal adulta y cambia en respuesta a lesión medular* (Poster). Congress: "XIII Congreso Nacional Sociedad Española de Neurociencia" Tarragona (Spain) 2009.

3. Fernández-Martos CM, **González-Fernández C**, Fernández-Núñez E, Maqueda-Fernández A, Pérez-Jort V, Vázquez-Pérez S, Rodríguez FJ. *Análisis de la expresión de las proteínas Wnts tras la lesión medular espinal en ratas Wistar adultas* (Poster). Congress: "XIII Congreso Nacional Sociedad Española de Neurociencia" Tarragona (Spain) 2009.

4. **González-Fernández C**, Fernández CM, González P, Maqueda A, Vázquez S, Pérez V, Medrano M, Rodríguez FJ. *Análisis de la expresión de los receptores y co-receptores de la vía de señalización Wnt tras una lesión medular en ratones adultos* (Poster). Congress: "XIV Congreso Nacional Sociedad Española de Neurociencia", Salamanca (Spain) 2011.

5. **González-Fernández C**, Fernández CM, González P, Maqueda A, Vázquez S, Pérez V, Medrano M, Rodríguez FJ. *Análisis de la expresión de ligandos e inhibidores de la vía de señalización Wnt tras una lesión medular en ratones adultos* (Poster).

Congress: “XIV Congreso Nacional Sociedad Española de Neurociencia”, Salamanca (Spain) 2011.

6. González P, Fernández-Martos CM, **González-Fernández C**, Maqueda A, Pérez V, Medrano M, Vázquez S, Rodríguez FJ. *Spatio-temporal expression pattern of Frizzled receptors alter contusive spinal cord injury* (Poster). Congress: “XIV Congreso Nacional Sociedad Española de Neurociencia”, Salamanca (Spain) 2011.

7. González P, Fernández-Martos CM, **González-Fernández C**, Maqueda A, Pérez V, Medrano M, Vázquez S, Rodríguez FJ. *Ryk Receptor Is Expressed in Fibroblasts and Glial Cells, and it Modulates their Response to Spinal Cord Injury* (Poster). Congress: “XIV Congreso Nacional Sociedad Española de Neurociencia”, Salamanca (Spain) 2011.

8. Fernández-Martos CM, González P, **González-Fernández C**, Maqueda A, Vázquez S, Pérez V, Medrano M and Rodríguez FJ. *Acute intraparenchymal leptin administration reduces secondary cell death and enhances functional recovery after spinal cord injury in rats* (Poster). Congress: “XIV Congreso Nacional Sociedad Española de Neurociencia”, Salamanca (Spain) 2011.

9. Fernández-Martos CM, González P, **González-Fernández C**, Maqueda A, Vázquez S, Pérez V, Medrano M and Rodríguez FJ. *Differential expression of Wnts after spinal cord contusion injury in adult rats* (Poster). Congress: “XIV Congreso Nacional Sociedad Española de Neurociencia”, Salamanca (Spain) 2011.

10. Maqueda A, Fernández-Martos CM, González P, **González-Fernández C**, Vázquez S, Pérez V, Medrano M, Rodríguez FJ. *El transplante de precursores neurales C17.2 que sobreproducen Wnt1 mejoran la función locomotora tras lesión medular por contusión en ratas wistar* (Poster). Congress: “XIV Congreso Nacional Sociedad Española de Neurociencia”, Salamanca (Spain) 2011.

11. Maqueda A, Fernández-Martos CM, González P, González-Fernández C, Vázquez S, Pérez V, Medrano M, Rodríguez FJ. *El transplante de precursores neurales C17.2 que sobreproducen Wnt5a incrementa la perdida de mielina, la reactividad astrolglial y microglial, y empeora la recuperación funcional en un modelo de contusión medular en rata adulta* (Poster). Congress: “XIV Congreso Nacional Sociedad Española de Neurociencia”, Salamanca (Spain) 2011.

12. Rodríguez FJ, Fernández-Martos CM, González P, Vázquez S., Fernández E, Maqueda A, **González-Fernández C** and Pérez V. *Acute ibuprofen antiinflammatory and neuroprotective action after spinal cord injury in adult wistar rats* (Poster). Congress: “XIV Congreso Nacional Sociedad Española de Neurociencia”, Salamanca (Spain) 2011.

13. **González-Fernández C**, Fernández-Martos CM, González P, Maqueda A, Pérez Jort V, Medrano Fernández M, Vázquez Pérez S and Francisco Javier Rodríguez Muñoz. *Wnt expression in the spinal cord of adult mice: more than a developmental morphogen*. “XV Congreso Nacional Sociedad Española de Neurociencia”, Oviedo (Spain) 2013.

14. González P, Fernández-Martos CM, **González-Fernández C**, Maqueda A, Pérez Jort V, Medrano Fernández M, Vázquez Pérez S, Arenas E and Francisco Javier Rodríguez Muñoz. *Frizzled receptor expression in the damaged spinal cord: special*

focus on spatio-temporal and cellular expression pattern of Frizzled 5. "XV Congreso Nacional Sociedad Española de Neurociencia", Oviedo (Spain) 2013.

15. Fernández-Martos CM, González P, **González-Fernández C**, Maqueda A, Vázquez Pérez S, Pérez Jort V, Medrano Fernández M and Francisco Javier Rodríguez Muñoz. *Acute intraparenchymal leptin administration reduces secondary cell death and enhances functional recovery after spinal cord injury in rats*. "4th Australian Neurotrauma Symposium". Hobart (Australia) 2013.

16. González Pérez, Francisco; **González Fernández, Carlos**; González Sánchez, Pau; Maqueda Fernández, Alfredo; Galán Arriero, Iriana; Pérez Jort, Virginia; Vázquez Pérez, Sandra; Rodríguez Muñoz, Francisco Javier. *Acute leptin treatment modifies Wnt profile expression after spinal cord injury in the rat*. "17th National Congress of the Spanish Society of Neuroscience", Valencia (Spain) 2017.

17. González Sánchez, Pau; **González Fernández, Carlos**; Maqueda Fernández, Alfredo; González Pérez, Francisco; Pérez Jort, Virginia; Vázquez Pérez, Sandra; Galán Arriero, Iriana; Rodríguez Muñoz, Francisco Javier. *Spatio-temporal and cellular expression pattern of PTK7 in the healthy rat and human spinal cord and after traumatic spinal cord injury in the rat*. "17th National Congress of the Spanish Society of Neuroscience", Valencia (Spain) 2017.

18. **González Fernández, Carlos**; González Sánchez, Pau; Maqueda Fernández, Alfredo; González Pérez, Francisco; Pérez Jort, Virginia; Vázquez Pérez, Sandra; Galán Arriero, Iriana; Rodríguez Muñoz, Francisco Javier. *Altered expression of Wnt family of proteins in human spinal cord of amyotrophic lateral sclerosis patients.* "17th National Congress of the Spanish Society of Neuroscience", Valencia (Spain) 2017.