

1. Contact Information

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2. Education

- 2001 BSc. Degree in Biology (Biomedicine).**
Universitat Autònoma de Barcelona, Spain
- 2004 MSc. Degree in Neurosciences**
Universitat Autònoma de Barcelona, Spain
- 2007 PhD. Degree in Biology (Neurosciences)**
Universitat Autònoma de Barcelona, Spain
Thesis Title: *Contribution of the cytokines TNF- α and IL-6 and metallothioneins in brain injury.*

3. Postgraduate Training

- 2008-2012 Senior Fellow**
Palmiter lab. HHMI-University of Washington, USA
- 2009-2010 Postdoctoral Fellowship.**
Ministry of Science and Innovation, Spain

Residencies

- May 2004 – October 2004: University of Washington, Seattle, USA. Palmiter lab.**
Spanish Ministry of Education and Science Mobility program for researchers.
Project 1: Generation of a targeting construct for an IL6 conditional KO mouse
Project 2: Obtaining of several single point mutations in AAV6 capsid gene (*Cap*).
Supervisor: Dr. Richard Palmiter.
- June 2006 – September 2006: University of Sydney, Sydney, Australia. Campbell lab.**
Spanish Ministry of Education and Science Mobility program for researchers.
Project: Evaluation of the role of IL-6 over-expression in the CNS in the experimental autoimmune encephalitis (EAE).
Supervisor: Dr. Iain L Campbell.

February 2008 – 2013: University of Washington, Seattle, USA. Palmiter lab.

Postdoctoral stay

Project 1: Mitochondrial encephalopathy after Nduf4 ablation

Project 2: Role of Gpr88 in schizophrenia

Project 3: Role of striatal GABA in behavior

Supervisor: Dr. Richard Palmiter.

4. Faculty Positions Held

2006-2008 Associate Lecturer in Animal Physiology

Universitat Autònoma de Barcelona, Spain

2013-2015 Assistant Professor

Department of Pediatrics. University of Washington. USA

2015-

Ramón y Cajal Investigator.

Departament de Biologia Cel·lular, Fisiologia I Immunologia.

Universitat Autònoma de Barcelona, Spain

5. Honors

1996-2001 Undergraduate Scholarship.

Ministry of Education, Spain

2002-2007 Postgraduate Scholarship (Ph.D).

Ministry of Science and Technology, Spain

2005 Young scientist in the field of Metallothionein Award.

Metallothionein Society. Beijing, China.

2005 Assistance grant for young Spanish neuroscientists

Spanish Society of Neurosciences. Torremolinos, Spain

2009 Extraordinary Doctorate Award.

Universitat Autònoma de Barcelona, Spain.

2012 International Travel Grant Award, FENS, Spain

2013- Ramon y Cajal Investigator

Spanish National Programme for Recruitment and Incorporation of Human Resources. Ministry of Economy and Competitiveness, Spain

6. Professional Organizations

2005-2006 Spanish Society for Neuroscience

7. Teaching Experience

At Universitat Autònoma de Barcelona (Spain)

| | | | |
|-----------|--|--------------------|------------------|
| 2003/2004 | Animal Physiology 2 nd Year (Biology). | Practical classes. | 30 h (10% total) |
| 2005/2006 | Animal Physiology 2 nd Year (Biology). | Practical classes. | 30 h (10%) |
| | Physiopathology 4 th Year (Biology). | Practical classes. | 60 h (20%) |
| 2006/2007 | Animal Physiology 2 nd Year (Biology). | Practical classes. | 60 h (20%) |
| | Animal Physiology 1 st Year (Biotechnology). | Practical classes. | 30 h (20%) |
| | Endocrinology 3 rd Year (Biology). | Practical classes. | 80 h (30%) |
| 2007/2008 | Endocrinology 3 rd Year (Biology). | Theory classes. | 45 h (50%) |
| | | Practical classes | 100 h (50%) |
| | Experimental Technics in Biology (III) 1 st Year (Environ. Sciences). | Practical classes | 67.5 h (20%) |
| 2014/2015 | Integrated laboratory II 1 st Year (Genetics) | Practical classes | 9h (25%) |
| | Systems Physiology 2 nd Year (Biomedicine) | Practical classes | 12h (20%) |
| 2015/2016 | Comparative and Environmental Animal Physiology 4 th Year (Biology) | Theory classes | 11h (25%) |
| | | Seminars | 3h (25%) |
| | | Practical classes | 4h (25%) |

Undergraduate Mentoring (at University of Washington)

| | |
|-----------|---|
| 2009/2011 | Bryan Roller (Currently attending Case Western Medical School) Project: Role of GABAergic signaling in striatal circuitry |
| 2011/2012 | Byron Chen (Currently attending Hong Kong University Dental School) Project: Characterization of striatal mitochondrial complex I deficiency |
| 2012/2013 | Viraj Parikh Project: Role of GABAergic signaling in striatal circuitry |

- 2013/2015** **Jessica Hui (Honors Thesis)**
Project: Cellular and molecular dissection of mitochondrial complex I deficiency
- 2014** **Benjamin Bauer**
Project: Expression of MRPL44 in different tissues

Graduate Students Mentoring

- 2009** **Valerie Cortez** (Rotation student)
Molecular and Cell Biology Program, University of Washington
- 2012** **Katherine Gumps** (Rotation student)
Program Neurobiology and Behavior, University of Washington
- 2015-** **Patricia Prada Dacasa** (ongoing)
Neurosciences Program, Universitat Autònoma de Barcelona.
- 2015-** **Pablo Machuca Márquez** (ongoing)
Neurosciences Program, Universitat Autònoma de Barcelona.

Postdoctoral mentoring

- 2013-Present** **Elisenda Sanz. Marie Curie Fellow**
University of Washington, USA and Universitat Autònoma de Barcelona, Spain
- 2014-Present** **Irene Bolea**
University of Washington, USA and Universitat Autònoma de Barcelona, Spain
- 2014-Present** **Alex Gella**
University of Washington, USA and Universitat Autònoma de Barcelona, Spain

8. Special National Responsibilities

- 2013-2015** ***Ad hoc* reviewer of grant proposals for the Polish National Science Center.**
Krakow, Poland
- 2013-2015** ***Ad hoc* reviewer of grant proposals for Agencia Nacional de Evaluación y Prospectiva (ANEP).** Madrid, Spain

9. Special Local Responsibilities

- 2004-2007** **Graduate student representative in the Animal Physiology Unit**
Universitat Autònoma de Barcelona, Spain.
- 2004-2007** **Graduate student (Master student) representative in the Executive Commission of the Institute for Neurosciences.**

2015- Universitat Autònoma de Barcelona, Spain.
Institute for Neurosciences animal user executive commission.
 Universitat Autònoma de Barcelona, Spain.

10. Research Funding

- 2015-2020 European Research Council Starting Grant.**
 Neuromito: Elucidating Neuronal susceptibility to mitochondrial disease.
 ERC-2014-StG-638106)
€1.500.000
- 2015-2018 MINECO. Proyectos I+D de Excelencia**
 SAF2014-57981P.
€120.000
- 2015-2020 MINECO. Programa Ramón y Cajal**
 RyC-2012-11873
€308.600 (€40.000 for research)
- 2015-2016 EU. Marie Curie Fellow Program**
Grantee: Elisenda Sanz
Supervisor: Albert Quintana
 H2020-MSCA-IF-2014-658352
€170.122 (€19.200 for research)

11. Bibliography (in chronological order)

a) Manuscripts in Refereed Journals

1. Penkowa M, Camats J, Hadberg H, **Quintana A**, Rojas S, Giralt M, Molinero A, Campbell IL, Hidalgo J. 2003. *Astrocyte-targeted expression of interleukin-6 protects the central nervous system during neuroglial degeneration induced by 6-aminonicotinamide.* **J Neurosci Res.** 73:481-496
2. Penkowa M, **Quintana A**, Carrasco J, Giralt M, Molinero A, Hidalgo J. 2004. *Metallothionein prevents neurodegeneration and central nervous system cell death after treatment with gliotoxin 6-aminonicotinamide.* **J Neurosci Res.** 77:35-53
3. Penkowa M, Florit S, **Quintana A**, Carrasco J, Giralt M, Molinero A, Hidalgo J. 2005. *Metallothionein reduces central nervous system inflammation, neurodegeneration, and cell death following kainic acid-induced epileptic seizures.* **J Neurosci Res.** 79:522-534.
4. Poulsen CB, Penkowa M, Borup R, Nielsen FC, Cáceres M, **Quintana A**, Molinero A, Carrasco J, Giralt M, Hidalgo J. 2005. *Brain response to traumatic brain injury in wild-type and interleukin-6 knockout mice: a microarray analysis.* **J Neurochem.** 92:417-432.

5. **Quintana A**, Giralt M, Rojas S, Penkowa M, Campbell IL, Hidalgo J, Molinero A. *Differential role of tumor necrosis factor receptors in mouse brain inflammatory responses in cryolesion brain injury*. 2005. **J Neurosci Res.** 82:701-716.
6. Penkowa M, Tio L, Giralt M, **Quintana A**, Molinero A, Atrian S, Vasák M, Hidalgo J. 2006. *Specificity and divergence in the neurobiologic effects of different metallothioneins after brain injury*. **J Neurosci Res.** 83:974-984
7. Penkowa M, Cáceres M, Borup R, Nielsen FC, Poulsen CB, **Quintana A**, Molinero A, Carrasco J, Florit S, Giralt M, Hidalgo J. 2006. *Novel roles for metallothionein-I + II (MT-I + II) in defense responses, neurogenesis, and tissue restoration after traumatic brain injury: insights from global gene expression profiling in wild-type and MT-I + II knockout mice*. **J Neurosci Res.** 84:1452-1474
8. **Hidalgo J**, Penkowa M, Espejo C, Martínez-Cáceres EM, Carrasco J, **Quintana A**, Molinero A, Florit S, Giralt M, Ortega-Aznar A. 2006. *Expression of metallothionein-I, -II, and -III in Alzheimer disease and animal models of neuroinflammation*. **Exp Biol Med** 231:1450-1458
9. Carrasco J, Adlard P, Cotman C, **Quintana A**, Penkowa M, Xu F, Van Nostrand WE, Hidalgo J. 2006. *Metallothionein-I and -III expression in animal models of Alzheimer disease*. **Neuroscience** 143:911-922
10. **Quintana A**, Molinero A, Florit S, Manso Y, Comes G, Carrasco J, Giralt M, Borup R, Nielsen FC, Campbell IL, Penkowa M, Hidalgo J. 2007. *Diverging mechanisms for TNF-alpha receptors in normal mouse brains and in functional recovery after injury: From gene to behavior*. **J Neurosci Res.** 85:2668-2685.
11. **Quintana A**, Molinero A, Borup R, Nielsen FC, Campbell IL, Penkowa M, Hidalgo J. *Effect of astrocyte-targeted production of IL-6 on traumatic brain injury and its impact on the cortical transcriptome*. 2008. **Dev Neurobiol.** 68:195-208.
12. **Quintana A**, Giralt M, Molinero A, Campbell IL, Penkowa M, Hidalgo J. *Analysis of the cerebral transcriptome in mice subjected to traumatic brain injury: importance of IL-6*. 2007. **J. Neuroimmunomodulation.** 14:139-143.
13. Sanz E, **Quintana A**, Battaglia V, Toninello A, Hidalgo J, Ambrosio S, Valoti M, Marco JL, Tipton KF, Unzeta M. 2008. *Anti-apoptotic effect of Mao-B inhibitor PF9601N [N-(2-propynyl)-2-(5-benzyloxy-indolyl) methylamine] is mediated by p53 pathway inhibition in MPP+-treated SH-SY5Y human dopaminergic cells*. **J Neurochem.** 105:2404-2417.
14. Sanz E, **Quintana A (co-first author)**, Valente T, Manso Y, Hidalgo J, Unzeta M. 2009. *Monoamine oxidase-B activity is not involved in the neuroinflammatory response elicited by a focal freeze brain injury*. **J Neurosci Res.** 87(3):784-794

15. Sanz E, **Quintana A**, Hidalgo J, Marco JL, Unzeta M. 2009. *PF9601N [N-(2-propynyl)-2-(5-benzyloxy-indolyl) methylamine] confers MAO-B independent neuroprotection in ER stress-induced cell death.* **Mol Cell Neurosci.** 41:19-31.
16. **Quintana A**, Müller M, Frausto RF, Ramos R, Getts DR, Sanz E, Hofer MJ, Krauthausen M, King NJ, Hidalgo J, Campbell IL. 2009. *Site-specific production of IL-6 in the central nervous system retargets and enhances the inflammatory response in experimental autoimmune encephalomyelitis.* **J Immunol.** 183:2079-2088.
17. **Quintana A**, Kruse SE, Kapur RP, Sanz E, Palmiter RD. 2010. *Complex I deficiency due to loss of Ndufs4 in the brain results in progressive encephalopathy resembling Leigh syndrome.* **Proc Nat Acad Sci USA** 107:10996-11001. **Cover Article**
18. Beutler L, Wanat M, **Quintana A**, Sanz E, Bamford N, Zweifel L, Palmiter RD. 2011. *Balanced NMDA receptor activity in D1R- and D2R-expressing medium spiny neurons is required for amphetamine sensitization.* **Proc Nat Acad Sci USA** 108:4206-4211
19. Beutler LR, Eldred KC, **Quintana A**, Keene CD, Rose SE, Postupna N, Montine TJ, Palmiter RD. 2011 *Severely impaired learning and altered neuronal morphology in mice lacking NMDA receptors in medium spiny neurons.* **PLoS One.** (11):e28168
20. Bruchas MR, Schindler A, Shankar H, Messinger D, Miyatake M, Land BL, Lemos JC, Hagan C, Neumaier J, **Quintana A**, Palmiter RD, Chavkin C. 2011. *Selective p38 (alpha) MAPK deletion in serotonergic neurons produces stress-resilience in models of depression and addiction.* **Neuron.** 71(3):498-511
21. **Quintana A**, Morgan PG, Kruse SE, Palmiter RD, Sedensky MM. 2012 *Altered Anesthetic Sensitivity of Mice Lacking Ndufs4, a Subunit of Mitochondrial Complex I.* **PLoS One** 7(8):e42904
22. **Quintana A**, Zanella S, Koch H, Kruse SE, Lee D, Ramirez JM, Palmiter RD. 2012. *Fatal breathing dysfunction in a mouse model of Leigh Syndrome.* **Journal Clin Invest** 122(7):2359-2368
23. **Quintana A**, Sanz E, Wang W, Storey GP, Güler AD, Wanat MJ, Roller BA, La Torre A, Amieux PS, McKnight GS, Bamford NS, Palmiter RD. 2012 *Lack of GPR88 enhances medium spiny neuron activity and alters motor- and cue-dependent behaviors.* **Nat Neurosci.** 15(11):1547-1555
Cover Article and Featured in News and Views in Nature Neuroscience
24. Arnett AL, Beutler L, **Quintana A**, Allen J, Finn E, Palmiter RD, Chamberlain JS. 2013. *Heparin-binding influences tissue tropism of AAV1 and AAV6 and increases efficiency of striated muscle transduction in mice.* **Gene Therapy** 20(5):497-503

25. **Quintana A**, Erta M, Ferrer B, Comes G, Giralt M, Hidalgo J. 2013. *Astrocyte-specific deficiency of interleukin-6 and its receptor reveal specific roles in survival, body weight and behavior.* **Brain Behav Immun.** 27(1):162-173
26. Giralt M, Ramos R, **Quintana A**, Ferrer B, Erta M, Castro-Freire M, Comes G, Sanz E, Unzeta M, Pifarré P, García A, Campbell IL, Hidalgo J. 2013 *Induction of atypical EAE mediated by transgenic production of IL-6 in astrocytes in the absence of systemic IL-6.* **GLIA** 61(4):587-600
27. Sanz E, Evanoff R, **Quintana A**, Evans E, Miller JA, Ko C, Amieux PS, Griswold MD, McKnight GS. 2013. *RiboTag analysis of actively translated mRNAs in Sertoli and Leydig cells in vivo.* **PLoS ONE** 8(6):e66179
28. Johnson SC, Yanos ME, Kayser EB, **Quintana A**, Sangesland M, Castanza A, Uhde L, Hui J, Wall VZ, Gagnidze A, Oh K, Wasko BM, Ramos FJ, Palmiter RD, Rabinovitch PS, Morgan PG, Sedensky MM, Kaeberlein M. 2013. *mTOR inhibition alleviates mitochondrial disease in a mouse model of Leigh syndrome.* **Science.** 342(6165):1524-8
29. Ferrer B, Navia B, Giralt M, Comes G, Carrasco J, Molinero A, **Quintana A**, Señarís RM, Hidalgo J. 2014. *Muscle-specific interleukin-6 deletion influences body weight and body fat in a sex-dependent manner.* **Brain Behav Immun.** 40:121-30
30. Navia B, Ferrer B, Giralt M, Comes G, Carrasco J, Molinero A, **Quintana A**, Leclerc J, Viollet B, Señarís RM, Hidalgo J. *Interleukin-6 deletion in mice driven by *aP2-Cre-ERT2* prevents against high-fat diet-induced gain weight and adiposity in female mice.* 2014. **Acta Physiol (Oxf).** 2014 Aug;211(4):585-96.
31. Lago N, **Quintana A**, Carrasco J, Giralt M, Hidalgo J, Molinero A. *Absence of metallothionein-3 produces changes on MT-1/2 regulation in basal conditions and alters hypothalamic-pituitary-adrenal (HPA) axis.* 2014. **Neurochem Int.** 74:65-73.
32. Liu L, Zhang K, Sandoval H, Yamamoto S, Jaiswal M, Sanz E, Li Z, Hui J, Graham BH, **Quintana A**, Bellen HJ. *Glial Lipid Droplets and ROS Induced by Mitochondrial Defects Promote Neurodegeneration.* 2015. **Cell.** 160(1-2):177-90.
33. Sanz E, **Quintana A (co-first author)**, Deem JD, Steiner RA, Palmiter RD, McKnight GS. *Fertility-regulating Kiss1 neurons arise from hypothalamic POMC-expressing progenitors.* 2015. **J Neurosci.** 35(14):5549-56.

b) Book Chapters

1. Molinero A, **Quintana A**, Penkowa M, Hidalgo 2008. *TNF receptors differential role in mouse brain inflammatory responses in:* Encyclopedia of Neuroscience. Neuroimmunology. 466-481. Springer
2. Quintana A, Hidalgo J. 2010. *Neuroinflamación* in: Esclerosis Múltiple. 91-99. Marge Médica Books.

c) Seminars and conferences

1. **2003- X Meeting of the Spanish Society of Neuroscience.** Lleida (Spain). Poster session.
2. **2005- III Course on Translational Neurovascular Research.** Barcelona (Spain). Invited presentation.
3. **2005- XI Meeting of the Spanish Society of Neuroscience.** Torremolinos, Malaga (Spain). Poster session.
4. **2005- The Fifth International Conference in Metallothionein.** Beijing (China). Poster session.
5. **2006- ICREA Brain Research Conference.** Advances in Alzheimer's Disease Barcelona, Spain. Poster session.
6. **2007- II Iberoamerican Congress on Neuroimmunomodulation.** Madrid, Spain. Oral presentation and poster session.
7. **2007- The 11th meeting of the Internacional Neurotoxicology Association, Pacific Grove, CA, USA.** Oral presentation and poster session.
8. **2007- Cytokines in health and disease: 15th annual conference of the International Cytokine Society.** San Francisco, CA, USA. Oral presentation.
9. **2008- Society for Zinc Biology Meeting.** Banff, Canada. Oral presentation.
10. **2011- UMDF Symposium.** Chicago, IL, USA. Oral presentation
11. **2012- 8th FENS Forum of Neuroscience.** Barcelona, Spain. Poster session
12. **2014- UMDF Symposium.** Pittsburgh, PA, USA. Poster presentation
13. **2014- Seattle Mitochondrial Conference.** Seattle, WA, USA. Poster presentation
14. **2015- VII Jornada del Departament del Biologia Cel·lular, Fisiologia i Immunologia.** Universitat Autònoma de Barcelona, Spain. Oral presentation.

13. Other

- 6/11/2012- Invited Faculty talk.** Department of Biochemistry, University of Washington. Seattle, WA. Title: Dissecting neuronal susceptibility in mitochondrial disease.

- 24/1/2013- Invited Faculty talk.** Seattle Children's Research Institute. Seattle, WA. Title: Dissecting neuronal susceptibility in mitochondrial disease.
- 8/3/2013- Invited Seminar. Insitut de Neurociències.** Universitat Autònoma de Barcelona. Barcelona, Spain. Title: Dissecting neuronal susceptibility in mitochondrial disease.
- 11/3/2013- Invited Faculty talk.** Section of Neurobiology. MRC-Laboratory of Molecular Biology, Cambridge, UK. Title: Dissecting neuronal susceptibility in mitochondrial disease.
- 25/4/2013- Invited Faculty talk.** Department of Physiology. University of Texas Health Science Center at San Antonio. San Antonio, TX. Title: Dissecting neuronal susceptibility in mitochondrial disease.
- 15/7/2013- Invited Seminar. Achucarro Basque Center for Neuroscience.** Bilbao, Spain. Title: Dissecting neuronal susceptibility in mitochondrial disease.
- 21/3/2014- Invited Seminar.** Seattle Children's Research Institute. Seattle, WA. Title: Elucidating neuronal pathology in mitochondrial disease.
- 3/6/2015- Inaugural Invited presentation.** VII Jornada del Departament del Biologia Cel·lular, Fisiologia i Immunologia. Universitat Autònoma de Barcelona. Title: Dissecting neuronal susceptibility to mitochondrial disease.