Curriculum vitae

CHRISTOPHE MARCELLE
Professor Faculty of Sciences and Technologies
University Claude Bernard Lyon1
NeuroMyoGene Institute, INMG
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christophe.marcelle@univ-lyon1.fr
Born in Liège, Belgium; Belgian citizenship.

Education

- 1985-1989: Ph. D. student at the ***Weizmann Institute of Science***, Israel. Thesis in human leukemia research under the supervision of ***Prof. E. Canaani***.
- 1978-1982: Master's Degree in Zoology, ***University of Liège, Belgium***. Master's thesis in Ecotoxicology.

Professional Experience

- January 2020 -: Adjunct Professor, Faculty of Medicine, Monash University, Australia.
- September 2015 -: Professor at the Faculty of Sciences and Technologies, University Lyon 1, France. Group leader at the ***INMG, Institut NeuroMyoGene.***
- 2009-2019: Professor at the Faculty of Medicine, Monash University. Group leader at the ***Australian Regenerative Medicine Institute***, EMBL Australia, Melbourne, Australia.
- 1998-2009: Professor at the Faculty of Sciences, University of Marseille, group leader at the ***Developmental Biology Institute of Marseilles (IBDM***), France.
- 1993-1998: Postdoctoral Fellow in the laboratory of ***Prof. M. Bronner-Fraser***, at the Developmental Biology Center, ***University of California in Irvine*** (1993-1996), then in the Division of Biology and Beckman Institute, ***California Institute of Technology*** (***Caltech***), Los Angeles (1996-1998).
- 1990-1993: Postdoctoral fellow (Laboratory of ***Prof. N. Le Douarin***) at the ***Cellular and Molecular Embryology Laboratory***, CNRS in Nogent Sur Marne, Paris, France.

Fellowships and Awards

- **1988-1990**: Fellowship from the Lady Tata Memorial Trust for Leukemia Research.
- **1990-1992**: Postdoctoral Fellowship from the European Molecular Biology Organization (EMBO).
- **1990-1992:** Postdoctoral Fellowship from the European Economic Community (EEU).
- **1993-1994**: Postdoctoral Fellowship from the North Antlantic Treaty Organization (NATO).
- **1993-1995:** Postdoctoral Fellowship from the Human Frontier Science Program Organization (HFSPO).
- **2012-2017:** National Health and Medical Research Council (NHMRC), Australia: Senior Research Fellowship.

Research Support (10 years)

1) **2012-2015**: NHMRC Project Grant APP1034736: AU$ 543,675 (€ 440.000). Project on muscle fusion. PI: C. Marcelle
2) **2012-2015**: NHMRC Project Grant APP1034825: AU$ 515,000 (€ 417.000). Project on muscle stem cells. PI: C. Marcelle.
3) **2013-2016**: ARC (Australian Research Council). Discovery Project Grant DP130103680: AU$ 430,000 (€ 348.000) Project on muscle morphogenesis. PI: C. Marcelle.
4) **2014-2017**: NHMRC Project Grant APP1065954: AU$ 378,447 (€ 275.000). Muscle fusion and dystrophy. PI: C. Marcelle.
5) **2014-2016**: PALSE, Programme Avenir Lyon St Etienne: €500,000 for installation of my lab in Lyon.

6) **2014**: Monash FMNHS Strategic Funding, 2014. SP8 confocal/multiphoton instrumentation for imaging complex tissues and whole organisms. Marcelle, C, Currie P, Kaslin J, Lieschke G, Rosenthal N, Smyth I, O'Bryan M, Loveland K, Bertram JF, Bourne J, and Harper IS. (AU$ 1,560,000; € 1,132.000)
7) **2015-2018**: NHMRC Project Grant APP1087743: AU$ 704,495 (€ 511.600). Seeing is believing: imaging muscle maintenance and repair. PI: C. Marcelle.
8) **2015-16**: Monash FMNHS Strategic Funding to Olivier Serralbo, Craig Smith, Tim Doran, Mark Tizard. Coordinator: Christophe Marcelle to build a quail transgenic facility at Monash. (AU$ 328,000; € 238.000)).
9) **2016-2021**: French Muscular Dystrophy Association (€90,000/year over 5 years). In support of my research at the INMG. PI: C. Marcelle
10) **2017**: French Muscular Dystrophy Association (AU$ 160,000; € 116.000) in support of a research project on the use of blood cells to repair dystrophic muscles. PI: C. Marcelle
11) **2017**: Monaco Myopathy Association (€100,000) in support of a research project on the use of blood cells to repair dystrophic muscles. PI: C. Marcelle
12) **2018**: Monaco Myopathy Association (€150,000) in support of a research project on the use of blood cells to repair dystrophic muscles. PI: C. Marcelle
13) **2018**: CNMD-INMG (Center for Neuromuscular Disease -Ottawa; Institut NeuroMyoGène -Lyon) Joint Collaborative Research Funding Program (€12,500) on the role of Dystrophin in asymmetric muscle stem cell division during development (joint project with Prof. Michael Rudnicki).
14) **2019**: CNMD-INMG (Center for Neuromuscular Disease -Ottawa; Institut NeuroMyoGène -Lyon) Joint Collaborative Research Funding Program (€12,500) on the role of Dystrophin in asymmetric muscle stem cell division during development (joint project with Prof. Michael Rudnicki).
15) **2020-2023:** ANR projet générique: "Genetic and Mechanical Control of Myoblast Fusion" (694,000€) in collaboration with F. Le Grand (INMG) and B. Ladoux (Institut Monod).

Publications

1) Balthazart, J., **Marcelle, C.**, Sanna, P., Schumacher, M. (1982). *Inhibition of beta-reductase activity in the quail brain by several steroid compounds.* ***IRCS Medical Science*** **10**: 267.
2) **Marcelle, C.,** Thomé, J.-P. (1983). *Acute toxicity and bioaccumulation of lindane in the Gudgeon, Gobio gobio (L.).* ***Bulletin of Environmental Contamination and Toxicology*** **31**: 453-458.
3) **Marcelle, C.,** Thomé, J.-P. (1984). *Relative importance of dietary and environmental sources of lindane in fish.****Bulletin of Environmental Contamination and Toxicology*** **33**, 423-429.
4) **Marcelle, C.**, Thomé, J.-P. (1984). *Analytical study of the contamination of aquatic invertebrates by lindane in a river of Hesbaye.* ***Annales de la Société Royale Zoologique de Belgique*** **114,** 209-214.
5) Fainstein, E., **Marcelle, C.**, Rosner, A., Canaani, E., Gale, R., Dreazen, O., Smith, S., Croce, C. (1987). *A new fused transcript in Philadelphia chromosome positive acute lymphocytic leukemia.* ***Nature*** **330,** 386-388.
6) Lifshitz, B., Fainstein, E., **Marcelle, C.**, Shtivelman, E., Amson, R., Canaani, E. (1988). *BCR genes and transcripts.* ***Oncogene*** **2,** 113-117.
7) Amson, R., **Marcelle, C.,** Telerman, A. (1989). *Identification of a 130 kda BCR-related gene product.*. ***Oncogene*** **4:** 243-247.
8) Glück, U., Zipori, D., Wetzler, M., Berrebi, A., Shaklai, M., Dreazen, O., Zaizov, R., Luria, D., **Marcelle, C.**, Stark, B., Umiel, T. (1989). *Long-term proliferation of human leukemia induced by mouse-stroma.* ***Exp. Hematology*** **17:** 398-404.
9) Fainstein, E., Einat, M., Gokkel, E., **Marcelle, C.**, Croce, C., Gale, R., Canaani, E. (1989). *Nucleotide sequence analysis of human ABL and BCR-ABL cDNAs.* ***Oncogene*** **4:** 1477-1481.
10) **Marcelle, C.**, Gale, R., Prokocimer, M., Berrebi, A., Merle-Beral, H., Canaani, E. (1989). *Analysis of BCR-ABL mRNA in chronic myelogenous leukemia patients, and the identification of a new BCR-related sequence in human DNA.* ***Genes Chromosomes & Cancer*** **1:** 172-179.
11) Canaani, E., Gale, R., **Marcelle, C.**, Fainstein, E., Prokocimer, M., Berrebi, A. (1991). Chronic Myelogenous Leukemia, Molecular Approaches to Research and Therapy. in: Albert Deisseroth & Ralph Arlinghaus, eds.
12) **Marcelle, C.**, Eichmann, A. (1992). *Molecular cloning of protein kinase genes expressed in early avian development* ***Oncogene*** **7:** 2479-2487.

13) Eichmann, A., **Marcelle, C.**, Bréant, C., Le Douarin, N. (1992). *Two molecules related to the VEGF receptor are expressed in early endothelial cells during avian embryonic development.* ***Mechanisms of Development* 42:** 33-48.
14) **Marcelle, C.**, Eichmann, A., Halevy, O, Bréant, C., Le Douarin, N. (1994). *Distinct developmental expression of a new avian fibroblast growth factor receptor.* ***Development* 120:** 683-694.
15) Halevy, O., Monsonego, E., **Marcelle, C.**, Hodik, V., Mett, A., Pines, M. (1994). *Involvement of a novel avian FGF receptor in myogenic and chondrogenic cell differentiation.* .***Exp. Cell Res.* 212**: 278-284..
16) **Marcelle, C.**, Wolf, J., Bronner-Fraser, M. (1995). *The in vivo expression of the FGF receptor FREK mRNA in avian myoblasts suggests a role in muscle growth and differentiation.* .***Dev. Biol.* 172:** 100-114.
17) Kenny, D., Bronner-Fraser, M., **Marcelle, C.** (1995). The receptor tyrosine kinase QEK5 is expressed in a gradient within the neural retina and the tectum. ***Dev. Biol.* 172**: 708-716.
18) John Sechrist and **Christophe Marcelle** (1996). *Cell Division and Differentiation in Avian Embryos: Techniques for Study of Early Neurogenesis and Myogenesis*. In Methods in Cell Biology, **51**: 301-329. Academic Press.
19) Eichmann, A., **Marcelle, C.,** Bréant, C., Le Douarin, N. (1996). *Molecular cloning of Quek1 and Quek2, two avian vascular endothelial growth factor (VEGF) receptor-like molecules.* ***Gene* 174**: 3-8.
20) Krull, C., Lansford, R., Gale, N., **Marcelle, C.,** Collazo, A., Yancopoulos, G., Fraser, S., Bronner-Fraser, M. (1997). *Interactions of EPH-related receptors and ligands confer rostrocaudal pattern to trunk neural crest migration.* ***Current Biol.* 7:** 571-580.
21) **Marcelle, C**., Stark, M., Bronner-Fraser, M. (1997). *Coordinate actions of BMPs, Wnts, Shh and noggin mediate patterning of the dorsal somite.* ***Development***. **124**: 3955-3963.
22) Stark, M., Sechrist, J., Bronner-Fraser, M., **Marcelle, C**. (1997). *Neural tube-ectoderm interaction is required for placode formation.* ***Development***. **124**: 4287-4295.
23) Baker, C., Stark, M., **Marcelle, C.,** Bronner-Fraser, M. (1998). *Competence, specification and induction of Pax-3 in the trigeminal placode*. ***Development***. **126**: 147-156.
24) **Marcelle, C.,** Ahlgren, S., Bronner-Fraser, M. (1999). *Regulation of somite proliferation and differentiation by Sonic Hedgehog.* ***Dev. Biol.* 214**:277-87.
25) **Marcelle, C.**, Lesbros, C. and Linker, C. (2002). *Somite patterning: a few more pieces of the puzzle.* Results and Problems in Cell Differentiation, **38**; B. Brand-Saberi, Ed.: Vertebrate Myogenesis. Springer-Verlag
26) Marics, I., Padilla, F., Guillemot, J.-F, Scaal, M., **Marcelle, C.** (2002). *FGFR-4 signaling is a necessary step in limb muscle differentiation*. ***Development***. **129**, 4559, 4569.
27) Garcia-Castro M, **Marcelle C**, Bronner-Fraser M. (2002). *Ectodermal Wnt Function As a Neural Crest Inducer*. ***Science***. **297**:848-51.
28) Church, V., Nohno, T., Linker, C., **Marcelle, C.**, Francis-West, P. (2002). *Wnt regulation of chondrocyte differentiation.* ***J. Cell Sc.* 115**:4809-4818.
29) Linker, C., Lesbros, C., Stark, M., **Marcelle, C.** (2003). *Intrinsic signals regulate the initial steps of myogenesis in vertebrates.* ***Development* 130**: 4797-4807.
30) Scaal, M., Gros, J., Lesbros, C., **Marcelle, C.** (2004)**.** *In ovo electroporation of avian somites.* ***Developmental Dynamics* 229**: 643-650.
31) Gros, J., Scaal, M., **Marcelle, C**. (2004). *A two-step mechanism for myotome formation in chick***.** ***Developmental Cell***. **6**: 875-82.
32) Venters SJ, Argent RE, Deegan FM, Perez-Baron G, Wong TS, Tidyman WE, Denetclaw WF Jr, **Marcelle C,** Bronner-Fraser M, Ordahl CP (2004). Precocious terminal differentiation of premigratory limb muscle precursor cells requires positive signalling. ***Developmental Dynamics* 229**:591-9.
33) Gros, J., Manceau, M., Thomé V., **Marcelle, C**. (2005). *A Common Somitic Origin for Embryonic Muscle Progenitors and Satellite cells*. ***Nature***, **435**: 954-958.
34) Linker, C., Lesbros, C., Gros, J., Burrus, L., Rawls, A., **Marcelle C.** (2005). b-*catenin dependent Wnt signaling controls the epithelial organization of somites through the activation of paraxis.* ***Development***. **132**: 3895-3905.
35) Kurose H, Okamoto M, Shimizu M, Bito T, **Marcelle C**, Noji S, Ohuchi H. (2005). FGF19-FGFR4 signaling elaborates lens induction with the FGF8-L-Maf cascade in the chick embryo. ***Dev Growth Differ***. **47**:213-23.
36) Manceau M., **Marcelle C**., Gros J. (2005). Une source unique de progéniteurs musculaires. ***Médecine/Sciences***. **21**: 15-17.

37) Manfroid I., Caubit X., **Marcelle C.**, Fasano L. (2006). Teashirt 3 expression in the chick embryo reveals a remarkable association with tendon development. ***Gene Expr Patterns***. **6:** 908-12.
38) Figeac, N., Daczewska, M., **Marcelle, C.,** Jagla, K. (2007). Muscle stem cells and model systems for their investigation**.** ***Dev. Dyn***. **236**: 3332-3342.
39) Salgado, D., Gimenez, G., Coulier, F., **Marcelle, C.** (2008). COMPARE, a multi-organism system for cross-species data comparisons and transfer of information. ***Bioinformatics***. 24:447-9. Epub 2007 Dec 1.
40) Manceau, M., Savage, K., Gros, J., Thomé, V., McPherron, A., Paterson, B., **Marcelle, C.** (2008). Myostatin promotes the terminal differentiation of embryonic muscle progenitors. ***Genes and Development*** **22** : 668-681.
41) Gros, J., Serralbo, O., **Marcelle, C.** (2009). Wnt11 acts as a directional cue to organize the elongation of early muscle fibers. ***Nature*** **457**:589-93. Epub: 5 November 2008.
42) Delfini, M.C., De La Celle, M., Gros, J., Serralbo, O., Seux, M., Marics, I., M., Scaal, M., **Marcelle, C** (2009). The primary myotome acts as a signaling center to initiate the emergence of muscle progenitors. ***Dev. Biol.*** **333**: 229-237.
43) Rios, AC and Marcelle, C. (2009). Head muscles: aliens who came in from the cold? ***Dev. Cell*** **16**: 779-780.
44) Relaix, F. and Marcelle, C. (2009). Muscle stem cells. ***Current Opinion in Cell Biology*** **21**: 748-753.
45) Rios, AC, Denans, N., and **Marcelle, C.** (2010). Real time observation of Wnt b-catenin signalling in the chick embryo. ***Dev. Dyn.*** **239**: 346-353.
46) Rios, AC, Serralbo, O., Salgado, D., **Marcelle, C.** (2011). Neural crest regulates myogenesis through the transient activation of Notch. ***Nature,*** 473:532-5.
47) Rios, AC, **Marcelle, C.,** Serralbo, O. (2012). Gene loss-of-function and live imaging in chick embryos. ***Methods in Molecular Biology*** **839**:105-17.
48) Krallinger, M., Leitner, F., Vazquez, M., Salgado, D., **Marcelle, C.,** Tyers, M., Valencia A., Chatr-Aryamontri, A. (2012). How to link ontologies and protein-protein interactions to literature: text-mining approaches and the BioCreative experience. ***Database***. doi:10.1093/database/bas017.
49) Rios, A.C., **Marcelle, C.** (2012). A tale of stolen kiss in muscle. ***Médecine/Sciences***. **28**: 264-266.
50) Salgado, D., Krallinger, M., Depaule, M., Drula, E., Tendulkar, A., Leitner, F., Valencia, A., **Marcelle, C.** (2012). MyMiner: a web application for computer-assisted biocuration and text annotation. ***Bioinformatics***. **28**:2285-2287.
51) Salgado, D., **Marcelle, C.**, Currie, P., Bryson-Richardson, R. (2012). The Zebrafish Anatomy Portal: A Novel Integrated Resource to Facilitate Zebrafish Research. ***Dev. Biol.*** **372**; 1-4. Epub 2012 Sep 8.
52) Picard, C., **Marcelle, C.** (2013). Two distinct muscle progenitor populations co-exist throughout amniote development. ***Dev. Biol.*** **373**:141-8. Epub 2012 Oct 23.
53) Serralbo, O., Picard CA., **Marcelle C.** (2013). Long term, inducible gene loss-of-function in the chicken embryo. ***Genesis***. **51**:372-380.
54) Figeac, N.*, Serralbo, O.*, **Marcelle, C**., Zammit, P. (2014). ErbB3 binding protein-1 (Ebp1) controls proliferation and myogenic differentiation of muscle stem cells. ***Dev. Biol.*** **386**:135-51. (*first co-authors).
55) Serralbo, O., **Marcelle, C.** (2014). Migrating cells mediate long-range WNT signaling. ***Development***. **141**: 2057-2063.
56) Hirst, C., **Marcelle, C.** (2014). The avian embryo as a model system for skeletal myogenesis. Results and Problems in Cell Differentiation 56; B. Brand-Saberi, Ed.: Vertebrate Myogenesis. Springer-Verlag. DOI 10.1007/978-3-662-44608-9_5.
57) Sieiro-Mosti, D., De La Celle, M., Pelé, M., **Marcelle, C.** (2014). A dynamic analysis of muscle fusion in the chick embryo. ***Development***. **141**: 3605-3611.
58) Véron, N., Qu, Z., Kipen, P., Hirst, C.E., **Marcelle, C.** (2015). CRISPR mediated somatic cell genome engineering in the chicken. ***Developmental Biology.*** **407**: 68-74.
59) Sieiro, D., Rios, A.C., Hirst, C.E., **Marcelle, C.** (2016). Cytoplasmic NOTCH and membrane-derived β-catenin link cell fate choice to epithelial-mesenchymal transition during myogenesis. ***eLife****;5:e14847.*
60) Sieiro D., Véron N., **Marcelle C.** (2017). The chicken embryo as an efficient model to test the function of muscle fusion genes in amniotes. ***PLoS ONE*** 12(5): e0177681.
61) Morin, V., Véron, N., **Marcelle, C.** (2017). CRISPR/Cas9 in the chicken embryo. ***Methods Mol. Biol.*** **1650**: 113-123.
62) Masselink, W., Masaki, M., Sieiro, D., **Marcelle, C.,** Currie, P.D. (2017). Phosphorylation of Lbx1 controls lateral myoblast migration into the limb. ***Developmental Biology***: **430**: 302-309.

63) Scaal, M., **Marcelle, C.** (2018). Chick Muscle Development. International Journal of Developmental Biology. Avian Model special issue. C. Stern, Ed. **62**: 127 - 136.
64) Serralbo, O., Véron, N., Cooper, C., Dejardin, MJ., Doran, T., **Marcelle, C.** (2020). Generation of transgenic quails by *in vivo* transfection of primordial germ cells. ***eLife***;9:e56312 DOI: 10.7554/eLife.56312.
65) Lebrun, D., Rahal, P., Morin, V., **Marcelle, C.** AKT, NOTCH and GSK3β interact to trigger early myogenesis in vertebrate embryos. **bioRxiv**, doi: https://doi.org/10.1101/377804
66) Sieiro, D, Jimenez, J., Morin, V., Salgado, D., **Marcelle, C.** Auto-inhibition of myoblast fusion by cyclic receptor signalling. **bioRxiv**, doi: https://doi.org/10.1101/553420

Teaching experience and responsibilities.

- 22 years teaching experience (3-4 hours teaching/week/all year) at the University of Marseilles and at the University of Lyon. All levels (2nd to 5th year of University, i.e. Bachelor's and Master's degree). I taught mainly Developmental Biology and Evo-Devo courses. I was teaching about 50 hours/year at Monash University.
- 2008-2009: Responsible for the Master's program in Developmental Biology and Immunology at the University of Marseilles. I was part of the honour's (i.e. Master's) jury at Monash (3 years).

Thesis direction

Direction of 14 PhD theses

- **Daryn Kenny** : Molecular Cloning and Early Embryonic Expression of Two EPH-related Receptors Tyrosine Kinases. UC Irvine 1995
- **Mike Stark** : Early Events in Trigeminal Placode Development. UC Irvine 1998
- **Claudia Linker** : Initiation de la Myogenèse chez l'Embryon de Poulet. Université de la Méditerranée 2002
- **Cynthia Lesbros** : Role de la Signalisation Wnt au cours de la différenciation du somite chez l'embryon de poulet. Université de la Méditerranée. April 2003
- **Jérôme Gros** : Morphogenèse et croissance du muscle squelettique chez l'embryon de poulet. Université de la Méditerranée: October 2006.
- **Marie Manceau**: Régulation moléculaire de la croissance musculaire chez l'embryon de poulet. Université de la Méditerranée: June 2007.
- **David Salgado**: COMPARE/MyoBase: base de données multi-organismes pour la biologie du muscle et les maladies musculaires. April 2009
- **Marie de la Celle**: Etude de deux aspects de la myogenèse chez l'embryon de poulet: la transition épithélio-mésenchymateuse et la fusion des myoblastes. October 2009.
- **Anne Rios**: Etude du role de la voie de signalisation Notch au cours de la myogenese. September 2011
- **Cyril Picard**: Characterization of new subpopulations of muscle progenitors during amniote embryonic development. January 2013
- **Daniel Sieiro**: Cellular and Molecular Events During Chick Myogenesis. February 2015.
- **Diane Lebrun**: Caractérisation et généralisation de l'implication de la voie NOTCH cytoplasmique au cours des processus de transition épithélio-mésenchymateuse chez l'embryon de poulet. June 2018.
- **Laura Galvis**: Modulation of Muscle Regeneration and Repair. February 2019
- **Julie Melendez**: Started September 2017.
- **Yoann Le Toquin:** Started September 2019.