Curriculum Vitae

Miguel Torres, Ph.D.

Senior Researcher
Centro Nacional de Investigaciones Cardiovasculares (CNIC)

Date and place of birth: October 18, 1963 - Madrid, Spain

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EDUCATION

M. Sc., Biology, Complutense University Madrid (UCM), 1986
Ph.D., Biochemistry and Molecular Biology, Autónoma University Madrid (UAM), 1991

PREVIOUS POSITIONS

2007 – 2015	Director, Department of Cardiovascular Development and Repair, CNIC, Madrid
2009 – 2012	Associate Director, Centro Nacional de Investigaciones Cardiovasculares, ISCIII. Madrid
2005 – 2006	Director, Immunology and Oncology Department, Centro Nacional de Biotecnología, CSIC. Madrid
1999 – 2006	Tenured Research Scientist. Centro Nacional de Biotecnología, CSIC. Madrid
1996 – 1999	Research Scientist, Centro Nacional de Biotecnología, CSIC. Madrid
1992 – 1995	Postdoctoral Researcher, Biophysical Chemistry Institute, Max Planck Society, Gottingen, Germany
1991 – 1992	Postdoctoral Researcher, Centro de Investigaciones Biológicas, CSIC. Madrid
1988 – 1991	Predoctoral Researcher, Centro de Investigaciones Biológicas, CSIC. Madrid
1984 – 1987	Student Trainee, Centro de Investigaciones Biológicas, CSIC, Madrid

SELECTED HONORS AND AWARDS

1988	Predoctoral Fellowship from the Spanish Ministry of Education and Science, Spain
1992	Postdoctoral Fellowship, European Molecular Biology Organization
1993	Postdoctoral Fellowship, European Union
2001	Member "Faculty of 1000"
2003- present	Member of the Editorial Board of Developmental Dynamics
2004-2008	Member of the Scientific Advisory Board of the biotechnology company Oncostem Therapeutics
2009	Elected Chair of the COST Action BM0805 "HOX and TALE transcription factors in Development and Disease"
2011-present	Member of the Editorial Board of Developmental Biology
2011	Member of the Scientific Committee selected to organise the 2014 Weinstein Meeting on Cardiovascular Development in Madrid
2011	Scientific co-director of the CNIC application that obtained the Severo Ochoa Award
2012	Shortlisted for the "La Vanguardia" price "Scientific breakthrough of the year"
2012- present	Member of the Editorial Board of the International Journal of Developmental Biology
2014	Pfizer price for the best basic research article from Spain in 2014

FORMER STUDENTS AND POSTDOCS: CURRENT POSITIONS

Antonio Serrano, Group Leader, Hospital 12 de Octubre, Madrid, Spain
Carlos Parras, Group Leader, Inserm-UPMC, Paris, France
Gemma Fernández, Director, Cellerix SA
Nadia Mercader, Group Leader, CNIC
Juan José Sanz-Ezquerro, Group Leader, CNB, Madrid

Giovanna Giovinazzo, Head of Gene Pluripotent Stem Cell Technologies, CNIC
Adrian Grimes, Postdoc, University of Wisconsin, Madison, USA
Luis Suárez, MD, Monterrey Hospital, Mexico
Carlos García Arques, Postdoc, CBM, Madrid
Clara Garcia Andrés, Ms Science Communication
Catalina Ana Rosselló, Postdoc, Lund University, Malmö, Sweden
Alberto Roselló, Postdoc, MSKCC, New York, USA
Laura Padrón-Barthe, Postdoc, Hospital Puerta de Hierro, Madrid
Cristina Villa del Campo, Postdoc, Oxford University

PUBLICATIONS

M. Torres and L. Sánchez (1989). The scute (T4) gene acts as a numerator element of the X:A signal that determines the state of activity of Sex-lethal in Drosophila. ***EMBO J.*** 8, 3079-3086.

B. Granadino, **M. Torres**, D. Bachiller, E. Torroja, J.L. Barbero and L. Sánchez (1991). Genetic and molecular analysis of new female specific lethal mutations at the gene Sxl of Drosophila melanogaster. ***Genetics*** 129, 371-383.

M. Torres and L. Sánchez (1991). The sisterless-b function of the Drosophila gene scute is restricted to the stage when the X:A ratio determines the activity of Sex-lethal. ***Development*** 113, 715-722.

M. Torres and L. Sánchez (1992). The Drosophila segmentation gene runt is needed for sex determination. ***Genetical Research*** 59, 189-198.

L. Sánchez, B. Granadino and **M. Torres** (1994). Sex determination in Drosophila melanogaster : X-linked genes involved in the initial step of Sex-lethal activation. ***Developmental Genetics*** 15, 251-264.

J. Del Mazo, G. Prantera, **M.Torres** and M. Ferraro (1994). DNA methylation changes during Mouse spermatogenesis. ***Chromosome Research*** 2, 147-152.

G. Yamada, A. Mansouri, **M. Torres**, M. Blum, E.T. Stuart, M. Schultz, E. de Robertis and P. Gruss. (1995). Targeted mutation of the mouse Goosecoid gene leads to neonatal death and craniofacial defects in mice. ***Development*** 121, 2917-2922.

M. Torres, E.Gómez-Pardo, G.R. Dressler and P. Gruss (1995). Pax-2 controls multiple steps of urogenital development. ***Development*** 121, 4057-4065.

A. Mansouri, Stoykova, **M. Torres** and P. Gruss (1996). Dysgenesis of Cephalic neural crest derivatives in Pax-7 -/- mutant mice. ***Development*** 122, 831-838.

M. Torres, E. Gómez-Pardo and Peter Gruss (1996). Pax-2 Contributes to inner ear patterning and optic nerve trajectory. ***Development*** 122, 3381-3391.

M.Torres, A. Stoykova, Huber, O., Chowdhury, K., Bonaldo, P., Mansoury, A., Butz, S., Kemler, R. and P. Gruss (1997). An alpha-E-Catenin gene trap mutation defines its function in preimplantation development. ***Proc. Natl. Acad. Sci.,*** 94, 901-906.

B. Sosa-Pineda, K. Chowdhury, **M. Torres**, G. Oliver and P. Gruss (1997). Pax-4 mutant mice show defects in Pancreatic development leading to Insulin deficiency. ***Nature***, 386, 399-402.

K. Chowdhury, P. Bonaldo, **M.Torres**, A. Stoykova and P. and P. Gruss (1997). Evidence for stochastic integration of gene trap vectors into the mouse germline. ***Nucleic Acids Research***, 25, 1531-1536.

A Bosse, Zülch, M.B.Becker, **M. Torres**, J.L. Gómez-Skarmeta, J. Modolell and P. Gruss (1997). Identification of the mammalian Iroquois homeobox gene family with overlapping expression during development of the early nervous system. ***Mechanisms of Development***, 69,169-181

M. Torres (1998) The use of Embryonic Stem Cells for the Genetic Manipulation of the Mouse. ***Current Topics in Developmental Biology***, 36, 99-114.

M. Torres and F. Giráldez (1998). The development of the vertebrate inner ear. ***Mechanisms of Development***, 71, 5-21

A. Stoykova*, Chowdhury* K., Bonaldo*P., **Torres M.*** and Gruss, P. (1998). Gene trap expression and mutational analysis for genes involved in the development of the mammalian nervous system. **These authors contributed equally to this work.* ***Developmental Dynamics***, 212, 198-213

S. González-Crespo, M. Abu-Shaar, **M. Torres**, C. Martínez-A, R.S. Mann and G. Morata (1998). Antagonistic interactions between exd function and Hh (Dpp/Wg) signaling in the developing limb. ***Nature***, 394, 198-200

P. Bonaldo*, Chowdhury*, K., Stoykova*, A., **M.Torres*** and Gruss, P. (1998). Efficient gene trap screening for novel developmental genes using IRES ßgeo vector and in vitro preselection. **These authors contributed equally to this work.* ***Experimental Cell Research***, 244, 125-136.

C. Clavería, J.P. Albar, A. Serrano J.M. Buesa, J.L. Barbero, C. Martínez-A and **M.Torres** (1998). Drosophila grim induces apoptosis in mammalian cells. ***EMBO J.,*** 17, 7199-7208.

N. Mercader, E. Leonardo, N. Azpiazu, A. Serrano, G. Morata, C. Martínez-A and **M. Torres** (1999). Conserved regulation of proximodistal limb axis development by Meis1/Hth. ***Nature***, 402, 425-429.

P. Lauzurica, D. Sancho, **M. Torres**, B. Albella, M. Marazuela, T. Merino, J. A. Bueren, C. Martínez-A and F. Sánchez-Madrid. (2000). Phenotypic and functional characterization of hematopoietic cell lineages in CD69- deficient mice. ***Blood***, 95, 2312-2320.

C. González-Buillault, E. Demandt, F. Wandosell, **M.Torres**, P. Bonaldo, A. Stoykova, K. Chowdhury, P. Gruss, J. Avila, and M.P. Sánchez (2000). Perinatal lethality of microtubule-associated protein 1B deficient mice expressing alternative isoforms of the proteins at low levels. ***Mol. Cell. Neuroscience***, 16, 408-421.

N. Mercader, E. Leonardo, M. E. Piedra, C. Martínez-A, M. Á. Ros and **M. Torres** (2000). Opposing RA and FGF signals control proximodistal vertebrate limb development through regulation of Meis genes. ***Development***, 127, 3961-3970.

R. Varona, R. Villares, L. Carramolino, I. Goya, A. Zaballos, J. Gutiérrez, **M. Torres**, C. Martínez-A and G. Marquez (2001). Mice deficient in CCR6 have impaired leukocyte homeostasis and altered contact hypersensitivity and delayed type hypersensitivity responses. ***Journal of Clinical Investigation***, 107, R37-R45.

A. Pires-daSilva, K. Nayernia, W. Engel, **M. Torres**, A. Stoykova, K. Chowdhury, P. Gruss (2001). Mice Deficient for Spermatid Perinuclear RNA-Binding Protein Show Neurologic, Spermatogenic, and Sperm Morphological Abnormalities. ***Dev. Biol.***, 233, 319-328.

F. Trousse, E. Martí, P. Gruss, **M. Torres** and P. Bovolenta (2001). Control of retinal ganglion cell axon growth: A new role for SHH. ***Development***, 128, 3927-3936.

C. Clavería, E. Caminero, C. Martínez-A , S. Campuzano and **M. Torres** (2002). GH3, a novel proapoptotic domain in Drosophila Grim, promotes a mitochondrial death pathway. ***EMBO J.*** 21, 3327-3336.

M. Torres, J.P. Couso and M. Ros (2002). Building Limb Buds. ***EMBO Reports***, 10, 933-937.

R Goya. Villares, J. Gutiérrez, A. Zaballos, L. Kremer, R. Varona, L. Carramolino, A. Serrano, P. Pallarés, L.M. Criado, **M. Torres**, C. Martínez-A and Gabriel Márquez (2003). Absence of CCR8 induces an altered mouse thymic architecture and enhanced contact hypersensitivity response, but CCR8-deficient mice show a normal response to an ovoalbumin-induced allergic airway disease. ***J Immunol*** 170: 2138-2146.

Y. Takahashi, Nick Carpino, James C.Cross, **M. Torres**, Evan Parganas and James N.Ihle (2003). SOCS3: an essential regulator of LIF receptor signaling in trophoblast giant cell differentiation. ***EMBO J***, 22, 372-384.

C. Clavería and **M. Torres** (2003). Mitochondrial Apoptotic Pathways Induced by Drosophila Programmed Cell Death Regulators. ***BBRC***, 304, 531-537.

C. Clavería, C. Martínez-A and **M. Torres** (2004). A Bax/Bak-independent mitochondrial death pathway triggered by Drosophila Grim GH3 domain in mammalian cells. ***JBC***, 279, 1368-1375

V. Azcoitia, M.Aracil, C. Martínez-A and **M. Torres** (2005) The homeodomain protein Meis1 is essential for definitive hematopoiesis and vascular patterning in the mouse embryo. ***Dev. Biol.*** 280, 307-320.

N. Mercader, E. M. Tanaka and **M. Torres** (2005) Proximodistal identity during vertebrate limb regeneration is regulated by Meis homeodomain proteins. ***Development***, 132:4131-42.

C. G. Arques, R. Doohan, J. Sharpe and **M. Torres** (2007) Mouse limb mesenchyme is compartmentalized along the dorso-ventral but not the proximo-distal or anterior-posterior axes. ***Development*** 134:3713-22.

S.F. Burn, Boot MJ, de Angelis C, Doohan R, Arques CG, **Torres M** and Hill RE. (2008) The Dynamics of Spleen Morphogenesis. ***Dev. Biol.***, 318:303-11.

M.J. Boot, C Henrik Westerberg, JJ Sanz-Ezquerro, J. Coterell, R Schweitzer, **M Torres** and J Sharpe (2008) In vitro whole-organ imaging: Quantitative 4D analysis of growth and dynamic gene expression in mouse limb buds. ***Nature Methods***, 5, 609-612

F. Sanchez-Madrid, MA del Pozo, A Bernad, **M Torres**, V Fuster (2008). CNIC: A new approach to cardiovascular research. ***Nature Clinical Practice Cardiovascular Medicine*** 5 CNIC Edition 2-6

N. Mercader, Selleri L, Criado LM, Pallares P, Parras C, Cleary ML and **Torres M**. (2009) Ectopic Meis1 expression in the mouse limb bud alters P-D patterning in a Pbx1-independent manner. ***Int J Dev Biol***, 53:1483-94.

C.G. Arques and **M Torres** (2009). From lineage to shape: modeling dorsal-ventral specification in the developing mouse limb. ***Contemporary Mathematics*** 492, 13-25

L. Carramolino, Fuentes J, García-Andrés C, Azcoitia V, Riethmacher D, and **Torres M**. (2010). Platelets play an essential role in separating the blood and lymphatic vasculatures during embryonic angiogenesis. ***Circulation Research*** 106, 1197-201

C.A. Rossello, **Torres M**. (2010). Gene transfer by electroporation into hemogenic endothelium in the avian embryo. ***Developmental Dynamics*** 239:1748-54.

E. Jimenez-Guri, Udina F, Colas JF, Sharpe J, Padrón-Barthe L, **Torres M**, Pujades C. (2010). Clonal análisis in mice underlines the importanceof rhombomeric boundaries in cell movement restriction Turing hindbrain segmentation. ***PLoS One***. 5(4):e10112.

C. García-Andrés, **Torres M** (2010). Comparative expression pattern analysis of the highly conserved chemokines SDF1 and CXCL14 during amniote embryonic development. ***Developmental Dynamics*** 239:2769-77.

J.M. González-Rosa, Padrón-Barthe L, **Torres M**, Mercader N. (2010). Lineage tracing of epicardial cells during development and regeneration. ***Rev Esp Cardiol*** 63:36-48

A.C. Grimes, Durán AC, Sans-Coma V, Hami D, Santoro MM, **Torres M** (2010). Phylogeny informs ontogeny: a proposed common theme in the arterial pole of the vertebrate heart. ***Evol Dev*** 12:555-67

J.M. González-Rosa, Martín V, Peralta M, **Torres M**, Mercader N. (2011). Extensive scar formation and regression during heart regeneration after cryoinjury in zebrafish. ***Development*** 138:1663-74.

J. Casanova, Uribe V, Badia-Careaga C, Giovinazzo G, **Torres M**, Sanz-Ezquerro JJ. (2011) Apical ectodermal ridge morphogenesis in limb development is controlled by Arid3b-mediated regulation of cell movements. ***Development*** 138:1195-205.

Casas-Tinto S, **Torres M**, Moreno E (2011). The flower code and cancer development. ***Clin Transl Oncol*** 13:5-9.

L. Marcon, C García-Arqués, **M Torres** and J Sharpe. (2011). Computational clonal analysis of the developing mouse limb bud. ***PLoS Computational Biology***, 7(2): e1001071.

A. Roselló-Díez, **Torres M**. (2011). Regulative patterning in limb bud transplants is induced by distalizing activity of apical ectodermal ridge signals on host limb cells. ***Dev Dyn***. 240:1203-11.

A. Roselló-Díez, Ros MA, **Torres M.** (2011) Diffusible signals, not autonomous mechanisms, determine the main proximodistal limb subdivision. ***Science*** 332:1086-8.

Kovacic JC, Mercader N, **Torres M**, Boehm M, Fuster V (2012). Epithelial- and Endothelial- to Mesenchymal Transition: from Cardiovascular Development to Disease. ***Circulation*** 125:1795-1808

Martin-Puig S, Fuster V, **Torres M**. (2012) Heart repair: From natural mechanisms of Cardiomyocyte production to the design of new cardiac therapies. ***Annals New York Acad. Sci***. 1254:71 - 81.

Fuster V, **Torres M**. (2012) CNIC: Achieving Research Excellence Through Collaboration. ***Rev. Esp. Cardiol***. 65:511-516.

Hidalgo I, Herrera Merchan A, Ligos JM, Carramolino L, Nuñez J, Martinez F, Dominguez O, **Torres M**, Gonzalez S. (2012) Ezh1 Is Required for Hematopoietic Stem Cell Maintenance and Prevents Senescence-like Cell Cycle Arrest. ***Cell Stem Cell***. 11:649 - 662.

Richard C, Drevon C, Canto PY, Villain G, Bollérot K, Teillet MA, Vincent C, Rosselló Castillo C, **Torres M**, Oberlin E, Souyri M, and Jaffredo T. (2013) Endothelio-mesenchymal interaction controls runx1 expression and modulates the notch pathway to initiate aortic haematopoiesis. ***Developmental Cell*** 24, 600-611

Penkov D, San Martín DM, Fernandez-Díaz LC, Rosselló CA, Torroja C, Sánchez-Cabo F, Warnatz HJ, Sultan M, Yaspo ML, Gabrieli A, Tkachuk V, Brendolan A, Blasi F, **Torres M**. (2013) Analysis of the DNA-Binding Profile and Function of TALE Homeoproteins Reveals Their Specialization and Specific Interactions with Hox Genes/Proteins. ***Cell Reports*** 3, 1321-33

Johnen H, González-Silva L, Carramolino L, Flores JM, **Torres M**, Salvador JM. (2013) Gadd45g is essential for primary sex determination, male fertility and testis development. ***PLoS One***. 8:e58751. doi:10.1371/journal.pone.0058751

Clavería C, Giovinazzo G, Sierra R, **Torres M** (2013). Myc-driven endogenous cell competition in the early mammalian embryo. ***Nature***. 500, 39-44

Roselló-Díez, A., Arques, C.G., Delgado, I., Giovinazzo, G., **Torres, M**. (2014) Diffusible signals and epigenetic timing cooperate in late proximo-distal limb patterning. ***Development***, 141, 1534-1543

Wellik, D.M., **Torres, M**., Ros, M.A. (2014) Forward to the special issue on Hox/Tale transcription factors in development and disease. ***Developmental Dynamics***, 243, 1-3

Longobardi, E., Penkov, D., Mateos, D., De Florian, G., **Torres, M**., Blasi, F. (2014) Biochemistry of the Tale transcription factors PREP, MEIS, and PBX in vertebrates. ***Developmental Dynamics***, 243, 59-75

Spieler, D., Kaffe, M., Knauf, F., Bessa, J., Tena, J.J., Giesert, F., Schormair, B., Tilch, E., Lee, H., Horsch, M., Czamara, D., Karbalai, N., Toerne, C.V., Waldenberger, M., Gieger, C., Lichtner, P., Claussnitzer, M., Naumann, R., Müller-Myhsok, B., **Torres, M**., Garrett, L., Rozman, J., Klingenspor, M., Gailus-Durner, V., Fuchs, H., De Angelis, M.H., Beckers, J., Hölter, S.M., Meitinger, T., Hauck, S.M., Laumen, H., Wurst, W., Casares, F., Gómez-Skarmeta, J.L., Winkelmann, J. (2014) Restless Legs Syndrome-Associated intronic common variant in Meis1 alters enhancer function in the developing telencephalon ***Genome Research***, 24, 592-603

Villa del Campo, C., Clavería, C., Rocío, Sierra, R. and **Torres, M.** (2014). Cell competition promotes phenotypically silent cardiomyocyte replacement in the mammalian heart. ***Cell Reports***, 8, 1741-1751

Padrón-Barthe, L., Temiño, S, Villa del Campo, C., Carramolino, L., Isern, J., and **Torres, M.** (2014) Clonal analysis identifies hemogenic endothelium as the source of the blood–endothelial common lineage in the mouse embryo. ***Blood***, 124, 2523-2532

González-Lázaro, M., Roselló-Díez, A., Delgado, I, Carramolino, L., Sanguino, M.A., Giovinazzo, G. and Torres, M. (2015) Two New Targeted Alleles for the Comprehensive Analysis of Meis1 Functions in the Mouse. ***Genesis***, 12, 967-75

Cruz, FM, Sanz-Rosa, D, Roche-Molina, M, García- Prieto, J, García-Ruiz, JM, Pizarro, G, Jiménez-Borreguero, LJ, Torres, M, Bernad, A, Ruíz-Cabello, J, Fuster, V, Ibáñez, B, Bernal, JA. (2015) Exercise triggers arrhythmogenic right ventricular cardiomyopathy phenotype in mice expressing a disease- causing mutated version of human plakophilin-2 after single adeno-associated virus-mediated gene transfer. ***JACC***, in press

GRANTS

-Identificación y caracterización funcional de nuevas proteínas de la vía secretora mediante trampas génicas en células ES de ratón. Agency: **Comunidad Autónoma de Madrid**, ref. 07B/0022/1999, 2000, **PI: M. Torres**

-Regulación y función de los genes de la familia homeobox MEIS/PBX. Agency: **Comunidad Autónoma de Madrid**, ref. 08.6/0032/20001, 2001-2002, **PI: M. Torres**

-Estudio del control de la diferenciación y muerte celular programada por factores de transcripción de la familia TALE-homeobox". Agency: **CICYT**, ref. SAF00-0160, 2000-2003, **PI: M. Torres**

-Genómica Funcional en Modelos Vertebrados para el Estudio Comparado de Genes de Desarrollo Embrionario. Agency: **Ministry of Science**, ref: GEN2001-4846-C05-04, 2002-2004, **PI: M. Torres** (Coordinator: G. Morata)

-Los genes Meis en el desarrollo y enfermedad: análisis en modelos de modificación genética dirigida en el ratón y en células madre embrionarias. Agency: **Ministry of Science**, ref. SAF2003-04317, 2003-2006 **PI: M. Torres**

-Regulación de la Organogénesis en Vertebrados por Factores Homeodominio. Agency: **Ministry of Science**, ref. BFU2006-10978, 2007-2009 **PI: M. Torres**

- Computerized 4-Dimensional Clonal Analysis of the Developing Mouse Limb. Agency: **Human Frontiers Science Program**, ref RGP8/2004, 2004-2007 **PI and International Coordinator: Miguel Torres**

-"Integrated technologies for in-vivo molecular imaging" Agency: **EU FP6**, ref LSHG-CT-2003-5032259. 2003-2008. **PI: Miguel Torres** (Coordinator: E N Economou, FORTH, Crete)

-CELDEV-CM: Bases celulares del desarrollo: Linajes embrionarios y competición celular. Agency: **Comunidad de Madrid**, ref. S-SAL0190-2006, 2007-2010, **PI: M. Torres**, (Coordinator: Ginés Morata, CBM-CSIC, Madrid)

-Opti-heart: Optimization of 3D image technologies for the study of normal and abnormal heart development. Agency**: La Marató TV3**, ref. 082031, 2009-2012, PI: J.J. Sanz-Ezquerro (CNIC, Madrid); Co PI: James Sharpe (CRG-Barcelona)

-Red de terapia celular RETICS TerCel. Agency: **FIS, ISCIII**, Ref: RD06/0010/0008, 2007-2012, **PI: M. Torres** (Coordinator: J.M. Moraleda, Hospital U. Virgen de la Arrixaca, Murcia)

-Meis and Pbx homeobox genes in development and disease. Agency: **Ministry of Science (MICINN),** ref. BFU2009-08331, 2010-12. **PI: M. Torres**

-COST Action: on HOX and TALE transcription factors in Development and Disease. Agency: COST – European Cooperation in the field of Scientific and Technical Research (**EU RTD FP7**), ref. BM0805, 2009-2013, **PI and International Chair for 32 groups from 18 countries: M. Torres**

-EU Initial Training Network CardioNet.- Translational Training network on the Cellular and Molecular Bases of Heart Homeostasis and Repair. Agency: **EU FP7**, ref. 28600. 2012-2015. **PI: M. Torres** (Coordinator, E. Lara)

- Severo Ochoa Award to CNIC. Agency: **Ministry of Science and Innovation.** Ref. SEV-2011-0052. 2012-2015. **Co-PIs: Valentín Fuster and M. Torres**

- Comunidad de Madrid: "CellDD, lineages and cell competition in development and disease" 2012-2015 **PI: M.Torres** (Coordinator, G. Morata)

- Genome regulation by the Hox-TALE transcription factor network in development and disease. Agency: **Ministry of Science and Innovation.** Ref. BFU2012-31086. 2013-2015. **PI: M. Torres**

TEACHING ACTIVITIES

National Postgraduate and Master Courses

1991, 1995-2003	Proliferación y diferenciación cellular y desarrollo. CIB (CSIC), U Alcalá de Henares, UC Madrid, UA Madrid
1996	Biología del desarollo. U. Valladolid
1996-2005	Activación celular y apoptosis en el sistema inmune. UA Madrid
1997-1998	Bases bioquímicas y moleculares de la function cellular III. UA Madrid
1998	Biotecnología. UA Madrid
1998-2000	Avances en biología del desarrollo. UA Madrid
2000	Biotecnología: una Mirada al future. U Santiago de Compostela
2001	La revolución biomedical: los diez últimos/próximos años. U Valladolid
2001	Diferenciación y desarrollo. U de Salamanca
2001	El genoma humano al descubierto. U Santiago de Compostela
2002	Biología Molecular del desarrollo. UA Madrid
2004	VIII Curso nacional de transplante de órganos, células madre y terapia. U Zaragoza

2005	Las fronteras de la Biología Molecular. Centro de Ciencias de Benasque. Huesca
2008-present	Cardiovascular Diseases Module (BMM9), Master on Molecular Biomedicine, UA Madrid (Coordinator and professor)

International Courses

1994	Manipulating mouse embryonic stem cells. INSERM,Le Vesinet, Paris, France
1995	New Trends in Molecular Biotechnology: Basic and Applied Aspects. U Louvain-La-Neuve, Brussels, Belgium
1995	EMBO practical course on mouse and chicken development. Biophysical Chemistry Institut, Max Planck Society, Göttingen, Germany
1999	Atelier transgenèse, INSERM, Toulouse, France
1999	Advanced Course in Molecular Biology Techniques. Instituto Venezolano de Investigaciones Científicas, Caracas, Venezuela
2001	Biology and Mathematics: Mathematics in Embryonic Development and Cancer Escuela de Matemáticas "Lluis Santaló" UIMP, Santander, Spain
2006	Basic Molecular Processes in Organisms and their Pathology. Escuela de Biología Molecular "Eladio Viñuela. UIMP, Santander, Spain
2010	Graduate School Advance Course on Molecular Medicine-Multidisciplinary Solutions to Medical Challenges, BIOCENTER, Oulu, Finland

SELECTED INVITED LECTURES

2000:	Simposio internacional Fundación Ramón Areces: "Transgénesis animal en biología, medicina y biotecnología. Madrid
2001	14th Congress of the International Society of Developmental Biology, Kioto, Japón
2002	Annual meeting of the French Society of Developmental Biology, Toulouse
2003	Workshop on "Developmental Mechanisms in Vertebrate Organogenesis". Fundación Juan March, Madrid
2003	EMBO Workshop "Boundaries in Development: 30 years of Progress" EMBL, Heidelberg, Alemania
2004	8th International Conference on Limb Development and Regeneration. Dundee, UK
2004	ESF conference on Cellular and Molecular Basis of Regeneration. San Feliu, España.
2004	II CRG Anual Symposium on "The cell in Development"
2005	British Council Opening Doors Workshop: New Imaging Techniques in Biology, Nerja (Malaga), Spain
2006	Workshop Homeodomain Proteins, Hematopoietic Development and Leukemias, Riva del Garda, Italy
2006	9th International Conference on Limb Development and Regeneration. Awaji, Japan
2007	British Council "Opening Doors" workshop: "Regeneration and Cell Therapy" Cardona, Spain
2009	Symposium on "Tissue Specification and Organogenesis", Gulbenkian Foundation, Lisbon, Portugal
2009	Heart Repair – 3rd Annual General Meeting, Berlin, Germany
2009	American Heart Association Scientific Sessions, Orlando
2010	EU Marie Curie symposium on "Developmental Signaling Networks"
2010	11th International Conference of Limb Development and Regeneration, Williamsburg, USA
2010	Gordon Research Conference on " Molecular Mechanisms In Lymphatic Function & Disease", Barga, Italy
2011	XXXIV Congreso de la Sociedad Española de Bioquímica y Biología Molecular, Barcelona, Spain
2011	VI Congreso de la Sociedad Española de Terapia Génica y Celular, Zaragoza
2011	EMBO Workshop - Lineage Commitments: Emphasis on Extraembryonic-Embryonic Interfaces, Leuven, Belgium

2011	NYAS Meeting: Evolving Challenges in Promoting Cardiovascular Health, Barcelona
2012	12th International Conference on Limb Development & Regeneration Meeting: HoxA cluster epigenetic regulation underlies cell-autonomous generation of late limb proximodistal pattern. Quebec, Canada
2012	45th Annual New York Cardiovascular Symposium: Major Topics in Cardiology Today: Embryogenic Development of the Heart: Implications for Stem Cell Regeneration in the Adult. New York, United States of America
2012	"Cell competition in the mammalian epiblast eliminates cells with lower Myc levels". Cornell University, NY, USA
2013	"Myc-driven Cell Competition in the Mammalian Embryo" Institute of Biomedical and Biomolecular Science (IBBS) Portsmouth, UK
2013	46th Annual New York Cardiovascular Symposium: Major Topics in Cardiology Today: Embryonic Development of the Heart: The Competitive Nature of Cardiac Development
2013	Hox-related and unrelated functions of TALE-homeodomain transcription factors during mammalian organogenesis. International Conference: Hox and TALE Transcription factors in Development and Disease. Egmond aan Zee, The Netherlands
2013	Andalucía International University Current Trends in Biomedicine Conference on 2The Hemato-Vascular System: Development and Disease. Clonal Analysis of the Early Endothelial and Hematopoietic Lineages in the Mouse. Baeza, Spain
2013	"Cell Competition in Mammalian Organogenesis". Second Meeting of the Portuguese society for Developmental Biology. Lisbon, Portugal
2014	Cell competition and tissue homeostasis in Mammals. Max-Planck Center for Molecular Cell Biology and Genetics. Dresden, Germany
2014	Cell Competition in Mammalian Development and Tissue Homeostasis. 47th Meeting of the Japanese Society for Developmental Biology. Nagoya. Japan
2014	Cell Competition in Mammalian Development and Tissue Homeostasis. The 2014 Santa Cruz Developmental Biology Meeting, UCSC
2014	Jonah Platt Stem Cell Lecture Series. Eli and Edythe Broad Center of Regeneration Medicine and Stem Cell Research, UCSF
2014	Role of Anabolism Regulation in Cardiac Development and Homeostasis. American Heart Association Scientific Sessions 2014, Chicago, USA

COURSES AND MEETINGS ORGANIZED

1995	EMBO practical course on mouse and chicken development". Max-Planck-Institute of Biophysical Chemistry. Goettingen, Germany
1999	I Simposium nacional de transgénesis animal. CNB, CSIC. Madrid, Spain
2000	International Symposium on Animal Transgenesis in Biology, Medicine and Biotechnology. Fundación Ramón Areces, Madrid, Spain
2001-2003	Workshop: Avances en Biología Molecular por Jóvenes Investigadores en el Extranjero. Centro Nacional de Biotecnología, CSIC, Madrid, Spain
2003	Juan March Meeting on Developmental Mechanisms in Vertebrate Organogenesis. Madrid, Spain
2005	British Council "Opening Doors" Workshop: New Imaging Techniques in Biology. Nerja, Málaga, Spain
2006	EMBO Workshop on "Homeodomain Proteins, Hematopoietic Development and Leukemias" Riva del Garda, Italy
2007	CNIC-UNIA Workshop on the Regulation of Pluripotency during life cycle: implications for embryonic development and regenerative medicine, Baeza, Jaen, Spain
2008	CNIO Cancer Conference on Development and Cancer, Madrid, Spain
2008	10th International Conference on Limb Development and Regeneration, Euroforum and the Auditorium of San Lorenzo de El Escorial (Madrid), Spain

2009	Symposium on developmental biology from a cell biology and biophysics perspective. CNIC, Madrid, Spain
2009	Workshop on Hox and Tale Homeoproteins in Development and Disease, Carmona, Seville, Spain
2012	Symposium on "HOX and TALE Transcription Factors in Development and Disease", El Escorial, Madrid, Spain.
2014	Weinstein International Conference on Cardiovascular Development. Madrid

PhD THESES SUPERVISED

2002 Cristina Clavería, Title: Análisis de la regulación de la muerte cellular programada en D. melanogaster y su conservación en vertebrados, Autonomous University of Madrid, Faculty: Science, First Class "Cum Laude"

2003 Nadia Mercader, Title: Role and Regulation of Meis Genes during Proximodistal Limb Development in Vertebrates, Autonomous University of Madrid, Faculty: Science, First Class "Cum Laude"

2005 Valeria Azcoitia, Title: Genetic Analysis of the Homeobox gene Meis1 during mouse embryogenesis, Autonomous University of Madrid, Faculty: Science, First Class "Cum Laude"

2007 Carlos García-Arqués, Title: 4-D Computerized clonal analysis of the developing mouse limb, Autonomous University of Madrid, Faculty: Science, First Class "Cum Laude"

2010 Catalina Ana Rosselló Castillo, Title: Role of the homeobox gene Meis I in hematopoietic stem cell generation in the vertebrate embryo: a functional analysis, Autonomous University of Madrid, Faculty: Science, First Class "Cum Laude"

2010 Alberto Roselló Díez, Title: New genetic strategies to analyze cell behaviour and gene function in the mouse, Autonomous University of Madrid, Faculty: Science, First Class "Cum Laude" / First National Award

2011 Clara García Andrés, Title: Identification and functional analysis of regulators of vertebrate limb pattern formation, Autonomous University of Madrid, Faculty: Science, First Class "Cum Laude"

2013 Daniel Mateos San Martín, Title: The DNA binding profile of TALE Proteins in the Embyo. Autonomous University of Madrid, Faculty: Science

2015 Cristina Villa del Campo, Title: Papel de la competición celular e el desarrollo del embrión de ratón. Autonomous University of Madrid, Faculty: Science

In progress. Covadonga Díaz, Title: Mechanisms of Cell Competition. Autonomous University of Madrid, Faculty: Science

In Progress. Ghislain Lieoux, Title: Clonal Analysis of the Developing Heart. Autonomous University of Madrid, Faculty: Science

In Progress. Sandra López, Title: Role of Meis proteins in the regulation of Hox expression patterns and functions. Autonomous University of Madrid, Faculty: Science

In Progress. Noelia Muñoz Martín, Title: Role of Meis proteins in cardiac development and homeostasis. Autonomous University of Madrid, Faculty: Science

OTHER MERITS

1996-present	External reviewer for National and International Agencies in the evaluation of research grant applications and of scientific positions: Plan Nacional and ANEP (Spain), CAM (Madrid), NSF (USA), FONCYT (Argentina), FCT (Portugal), SFI (Ireland) and the European Commission (ERC)
2001	Elected member "Faculty of 1000"
01,04,05,08,14	Member of the Selection Panel for the National Programme of Molecular and Cellular Biology for the evaluation of projects from the National Program for Research

1996-present Reviewer of manuscripts for Nature, Science, PNAS, EMBO J, Development, Blood, Developmental Biology, Mechanisms of Development, Developmental Dynamics and others

Madrid, February 2015