

CURRICULUM VITAE

Name: Pura Muñoz-Cánoves Date of birth: 30 August 1962
Place of birth: Miramar (Valencia), Spain

Nationality: Spanish

Working address: Pompeu Fabra University (UPF) and ICREA E-mail: pura.munoz@upf.edu

Dr. Aiguader 88, 08003 Barcelona, Spain;

Secondary appointment: Spanish National Center for Cardiovascular Research (CNIC)

M. Fernández Almagro 3, 28029 Madrid, Spain; E-mail: pura.munoz@cnic.es

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Current position: Full Professor of Cell Biology and Principal Investigator at Pompeu Fabra University (UPF), Barcelona, ICREA Research Professor

Joint appointment: Principal Investigator, Spanish National Cardiovascular Research Center, Madrid

Education and Research Training

1985 Pharmacology Degree, University of Valencia, Spain

1990 PhD in Biological Sciences, Autonomous University of Madrid, Spain. Work performed at the Scripps Research Institute

1990-1991 Postdoctoral fellow, University of California, San Diego, CA, USA

1992-1994 Postdoctoral fellow, The Scripps Research Inst., CA, USA

1994-1996 Research Associate, Cancer Research Institute (IRO), Barcelona, Spain

Professional Experience

1997-2001 Group leader, Cancer Research Institute (IRO), Barcelona, Spain

2002-2007 Group leader, Center for Genomic Regulation (CRG), Barcelona, Spain

2007-2008 Senior Group leader, Center for Genomic Regulation (CRG), Barcelona, Spain

2008-Present ICREA Senior Research Professor

2010-Present Full Professor of Cell Biology and Principal Investigator, Pompeu Fabra University, Barcelona

2016-Present Principal Investigator, Spanish National Cardiovascular Research Center, Madrid

Fellowships and awards:

- Fulbright postdoctoral fellowship (1990), FIS fellowship (1993)
- Full Professor of Cell Biology at the Pompeu Fabra University (after competitive examination) (2009)
- Group of Excellence Award from the Catalan Government (AGAUR) (2005-present)
- Group of Excellence on Neurodegenerative Diseases (CIBERNED) (2007-present)
- City of Barcelona Award on Life Sciences (2014)
- City of Gandia-Ser Award on Scientific Research (2016)
- La Vanguardia National Science Award (2015, 2017)
- Pfizer Award on Basic Research in Biomedicine (2015)
- Elected EMBO Member (2015)
- ERC Advanced Grant (2017)
- Spanish Selection of Science (Selección Española de la Ciencia) (2018)
- Narcís Monturiol Prize from Catalan Government to the Scientific and Technologic Career (2018)

Scientific Activities – Commissions of Trust

Editorial Boards, Editorial Activities

2010-Pres Editorial Board of *The FEBS Journal*[®] (Special Features Editor)

2010-Pres Editorial Board and Founding Member of *Skeletal Muscle* (Biomed Central Journal)

2014-Pres Advisory Board Member of *Oncotarget and Gerotarget*: Section in Aging

2016-Pres Advisory Board Member of Journal of Immunology and Regenerative Medicine

- 2014-Pres Faculty Member F1000Prime: Musculoskeletal & Pharmacology Section
- 2011-Pres Elected Member of the European Federation for Systematic Stem Cell Biology (EuroStemCell)
- 2013 Editor of the Special Issue on Muscle Stem Cells of *The FEBS Journal*
- 2014 Editor of the Special Issue on Inflammation in Muscle Repair, Aging, and Myopathies of *BioMed Research International*
- 2015 Editor of the Special Issue on Epigenetics of *The FEBS Journal*
- 2016 Editor of the Special Issue on Mesenchymal Transitions in Development and Disease of *Stem Cells International*
- 2016 Editor of the Special Issue on the Role of stem cells in skeletal muscle development, regeneration, repair, aging and disease of *Frontiers in Aging Neurosciences* (Section Stem Cell Research).
- 2017-Pres Editorial Board of the Journal of Immunology and Regenerative Medicine
- 2017-Pres Member of the Scientific Council of Fundaci3n GADEA por la Ciencia (GADEA Foundation for Science)

Manager of Scientific Evaluating Panels

- 2019-Pres President of the Fundamental Myology Commission of Association Franaise pour les Myopathies (AFM)
- 2018-Pres Member of the Jury of The New York Academy of Sciences and Takeda Pharmaceutical Company Prize
- 2018-Pres Member of Banc Sabadell Prize on Biomedicine
- 2018-Pres Member of Scientific Advisory Committee of CABIMER, Seville
- 2016-2018 Member of Scientific Advisory Committee of the Leibniz Institute on Aging, Jena, Germany
- 2016-Pres Member of Scientific Advisory Committee of the Institute of Biotechnology and Biomedicine (IBB), Barcelona
- Scientific Manager (“Gestor”) of the Spanish National Plan on Biomedicine (SAF)
- 2009-2012 Spanish Ministry of Economy (Science) – MINECO
- 2005-2009 Adjunct to the Coordinator of the Spanish National Evaluation Agency (ANEP) - Molecular and Cellular Biology Area
- 2012-2018 Vice-President of Fundamental Myology Commission of Association Franaise pour les Myopathies (AFM).
- 2004-Pres Member of the Ethical Committee for Clinical Evaluation of Human Stem Cell Therapies (CEIC) of the Center for Regenerative Medicine (Catalan Government)
- 2009 Panel Reviewer of Plan E on Biomedicine-Infrastructure (Spain), MICINN – International Relations
- 2009 Panel Reviewer of ESFRI projects European Union/Spain, MICINN - International Relations

Peer-reviewing Activities

- 2000-Pres Peer-reviewer of scientific articles for Nature, Nature Genetics, Cell Stem Cell, Developmental Cell, Nature Cell Biology, Journal of Experimental Medicine, Journal of Clinical Investigation, EMBO Journal, Journal of Cell Biology, EMBO reports, Journal of Cell Science, Stem Cells, Stem Cell Reports, etc.
- 2000-Pres Reviewer of Research Grants for: Spanish Ministry (MINECO), Spanish Ministry of Health (FIS), Agence Nationale de la Recherche (ANR, France), Muscular Dystrophy Association (MDA, USA), Association Franaise por les Myopathies (AFM, France), Italian Telethon, Wellcome Trust (UK), Muscular Dystrophy Campaign (UK), among others.
- 2000-Pres Member of Doctoral Thesis Committees (about 10 PhD Thesis per year)

Organization of International Conferences

- 2008 Organizer of the First EMBO Conference on “The Molecular and Cellular Mechanisms regulating Skeletal Muscle Development and Regeneration”. Held in Girona, Spain
- 2011 Organizer of the Indo-Spanish Workshop on Health and Medical Research – Bilateral Relations / Department of Science and Technology (India) and Ministry of Science and Innovation (Spain). Held in New Delhi, India.
- 2012 Organizer of the Workshop on Regenerative Medicine and Aging (MyoAge). Held in Barcelona, Spain.
- 2013 Organizer of the Workshop on Muscle Stem Cells (EndoStem). Held in Sitges, Barcelona, Spain.
- 2016 International Advisory Committee of The Batsheva de Rothschild Workshop on Skeletal and Cardiac Myogenesis The David Lopatie Conference Centre, Weizmann Institute of Science, Rehovot, Israel

Publications (since 2000)

Muñoz-Cánoves P, Huch M. Definitions for adult stem cells debated. **Nature** 563:328-329, 2018

Sousa-Victor P, García-Prat L, **Muñoz-Cánoves P**. New mechanisms driving muscle stem cell regenerative decline with aging. **Int J Dev Biol.** 62:583-590, 2018

Baar MP, Perdiguero E, **Muñoz-Cánoves P**, de Keizer PL. Musculoskeletal senescence: a moving target ready to be eliminated. **Curr Opin Pharmacol.** 40:147-155, 2018

Chang NC, Sincennes MC, Chevalier FP, Brun CE, Lacaria M, Segalés J, **Muñoz-Cánoves P**, Ming H, Rudnicki MA. The Dystrophin Glycoprotein Complex Regulates the Epigenetic Activation of Muscle Stem Cell Commitment. **Cell Stem Cell** 22:755-768, 2018

Solanas G, Peixoto FO, Perdiguero E, Jardí M, Ruiz-Bonilla V, Datta D, Symeonidi A, Castellanos A, Welz PS, Caballero JM, Sassone-Corsi P, **Muñoz-Cánoves P***, Benitah SA*. Aged Stem Cells Reprogram Their Daily Rhythmic Functions to Adapt to Stress. **Cell** 170:678-692, 2017 (** co-corresponding*)

Perdiguero E, Serrano AL, **Muñoz-Cánoves P**. Cilia Control Fat Deposition during Tissue Repair. **Dev Cell** 42:114-116, 2017

Testoni G, Duran J, García-Rocha M, Vilaplana F, Serrano AL, Sebastián D, López-Soldado I, Sullivan MA, Slebe F, Vilaseca M, **Muñoz-Cánoves P**, Guinovart JJ. Lack of Glycogenin Causes Glycogen Accumulation and Muscle Function Impairment. **Cell Metab.** 26:256-266, 2017

López-Luppo M, Catita J, Ramos D, Navarro M, Carretero A, Mendes-Jorge L, **Muñoz-Cánoves P**, Rodríguez-Baeza A, Nacher V, Ruberte J. Cellular Senescence Is Associated With Human Retinal Microaneurysm Formation During Aging. **Invest Ophthalmol Vis Sci.** 58:2832-2842, 2017

García-Prat L, Sousa-Victor P, **Muñoz-Cánoves P**. Proteostatic and Metabolic Control of Stemness. **Cell Stem Cell** 20:593-608, 2017

Romero-Moya D, Santos-Ocaña C, ..., Cardellach F, **Muñoz-Cánoves P**, Artuch R, Navas P, Menendez P. Genetic Rescue of Mitochondrial and Skeletal Muscle Impairment in an Induced Pluripotent Stem Cells Model of Coenzyme Q10 Deficiency. **Stem Cells** 35:1687-1703, 2017

García-Prat L, **Muñoz-Cánoves P**, Martínez-Vicente M. Monitoring Autophagy in Muscle Stem Cells. **Methods Mol Biol.** 1556:255-280, 2017

Bengal E, Perdiguero E, Serrano AL, **Muñoz-Cánoves P**. Rejuvenating stem cells to restore muscle regeneration in aging. **F1000Res.** 6:76, 2017

Serrano AL, **Muñoz-Cánoves P**. Fibrosis development in early-onset muscular dystrophies: Mechanisms and translational implications. **Semin Cell Dev Biol.** 64:181-190, 2017

Serrano AL, **Muñoz-Cánoves P**. Fibrosis development in early-onset muscular dystrophies: Mechanisms and translational implications. **Semin Cell Dev Biol.** 2016

Segalés J, Perdiguero E, **Muñoz-Cánoves P**. Regulation of Muscle Stem Cell Functions: A Focus on the p38 MAPK Signaling Pathway. **Front Cell Dev Biol.** 2016

Medici D, **Muñoz-Cánoves P**, Yang PC, Brunelli S. Mesenchymal Transitions in Development. **Stem Cells Int.** 2016

García-Prat L, **Muñoz-Cánoves P**. Aging, metabolism and stem cells: Spotlight on muscle stem cells. **Mol Cell Endocrinol.** 2016

Pessina P, **Muñoz-Cánoves P**. Fibrosis-Inducing Strategies in Regenerating Dystrophic and Normal Skeletal Muscle. **Methods Mol Biol.** 2016

Sousa-Victor P, Muñoz-Cánoves P. Regenerative decline of stem cells in sarcopenia. **Mol Aspects Med.** 50:109-17, 2016

García-Prat L, Martínez-Vicente M, Muñoz-Cánoves P. Autophagy: a decisive process for stemness. **Oncotarget** (Autophagy and Cell Death section) 7:12286-8, 2016

García-Prat L, **Muñoz-Cánoves P***, Martínez-Vicente M*. Dysfunctional autophagy is a driver of muscle stem cell functional decline with aging. **Autophagy** 12:612-3, 2016 (** co-corresponding*)

García-Prat L, Martínez-Vicente M, Perdiguero E, Ortet L, Garcia-Ubreva J, Rebollo E, Ruiz-Bonilla V, Gutarra S, Ballestar E, Serrano AL, Sandri M, **Muñoz-Cánoves P**. Autophagy maintains stemness by preventing senescence. **Nature** 529: 37-42, 2016

Brack AS, **Muñoz-Cánoves P**. The ins and outs of muscle stem cell. **Skel Muscle** 2016.

Segalés J, Islam AB, Kumar R, Liu QC, Sousa-Victor P, Dilworth FJ, Ballestar E, Perdiguero E, **Muñoz-Cánoves P**. Chromatin-wide and transcriptome profiling integration uncovers p38 α MAPK as a global regulator of skeletal muscle differentiation. **Skelet Muscle**. 2016

Gómez-Del Arco P, Perdiguero E, Yunes-Leites PS, Acín-Pérez R, Zeini M, Garcia-Gomez A, Sreenivasan K, Jiménez-Alcázar M, Segalés J, López-Maderuelo D, Ornés B, Jiménez-Borreguero LJ, D'Amato G, Enshell-Seiffers D, Morgan B, Georgopoulos K, Islam AB, Braun T, de la Pompa JL, Kim J, Enriquez JA, Ballestar E, **Muñoz-Cánoves P**, Redondo JM. The Chromatin Remodeling Complex Chd4/NuRD Controls Striated Muscle Identity and Metabolic Homeostasis. **Cell Metab**. 23:881-92, 2016

Muñoz-Cánoves P, Carvajal JJ, Lopez de Munain A, Izeta A. Editorial: Role of Stem Cells in Skeletal Muscle Development, Regeneration, Repair, Aging, and Disease. **Front Aging Neurosci**. 2016

García-Prat L, Martínez-Vicente M, **Muñoz-Cánoves P**. Methods for Mitochondria and Mitophagy Flux Analyses in Stem Cells of Resting and Regenerating Skeletal Muscle. **Methods Mol Biol**. 2016

Muñoz-Cánoves P, Di Croce L. Special issue on Epigenetics. **FEBS J**. 282:1569-70, 2015

Pessina P, Kharraz Y, Jardí M, Fukada SI, Serrano AL, Perdiguero E, **Muñoz-Cánoves P**. Fibrogenic cell plasticity blunts tissue regeneration and aggravates muscular dystrophy. **Stem Cell Reports** 4:1046-60, 2015

Artandi SE, Blau HM, de Haan G, Geiger H, Goodell MA, Jones L, Levine RL, **Muñoz-Cánoves P**, Rodewald HR, Wagers A, Wang ZQ, Yamashita Y. Stem Cells and Aging: What's Next? **Cell Stem Cell** 16: 578-81, 2015

Segalés J, Perdiguero E, **Muñoz-Cánoves P**. Epigenetic control of adult skeletal muscle stem cell functions. **FEBS J**. 282: 1571-1588, 2015

Aso E, Serrano AL, **Muñoz-Cánoves P**, Ferrer I. Fibrinogen-Derived γ 377-395 Peptide Improves Cognitive Performance and Reduces Amyloid- β Deposition, without Altering Inflammation, in A β PP/PS1 Mice. **J Alzheimers Disease**. 47: 403-12, 2015

Sousa-Victor P, García-Prat L, Serrano AL, Perdiguero E, **Muñoz-Cánoves P**. Muscle stem cell aging: regulation and rejuvenation. **Trends Endocrinol Metab**. 26:287-96, 2015

Muñoz-Cánoves P, Serrano AL. Macrophages decide between regeneration and fibrosis in muscle. **Trends Endocrin and Metab**. 26: 449-50, 2015

Sousa-Victor P, García-Prat L, **Muñoz-Cánoves P**. Dual mTORC1/C2 inhibitors: gerosuppressors with potential anti-aging effect. **Oncotarget**. 6:23052-23054, 2015

López-Arribillaga E, Rodilla V, Pellegrinet L, Guiu J, Iglesias M, Roman AC, Gutarra S, González S, **Muñoz-Cánoves P**, Fernández-Salguero P, Radtke F, Bigas A, Espinosa LL. Bmi1 regulates murine intestinal stem cell proliferation and self-renewal downstream of Notch. **Development**. 2015

Sousa-Victor P, Perdiguero E, **Muñoz-Cánoves P**. Geroconversion of aged muscle stem cells under regenerative pressure **Cell Cycle** 13:20, 2014

Bouché M, **Muñoz-Cánoves P**, Rossi F, Coletti D. Inflammation in muscle repair and aging. **Biomed Res Int**. 2014
Kharraz Y, Guerra J, Pessina P, Serrano AL, **Muñoz-Cánoves P**. Understanding the process of fibrosis in Duchenne muscular dystrophy. **BioMed Res Int**. 2014

Pessina P, Cabrera D, Morales G, Riquelme C, J Gutiérrez C, Serrano AL, Brandan E, **Muñoz-Cánoves P**. Novel and optimized strategies for inducing fibrosis in vivo: focus on Duchenne Muscular Dystrophy. **Skelet Muscle** 25;4:7, 2014

Sousa-Victor P, Gutarra S, García-Prat L, Rodríguez-Ubreva J, Ortet L, Ruiz-Bonilla V, Jardí M, Ballestar E, González S, Serrano AL, Perdiguero E, **Muñoz-Cánoves P**. Geriatric muscle stem cells switch reversible quiescence into senescence. **Nature** 506:316-21, 2014

- Muñoz-Cánoves P**, Michele D. Special issue: myogenesis: introduction. **FEBS J.** 280: 3979, 2013
- Acuña MJ, Pessina P, Olguin H, Cabrera D, Vio CP, Bader M, **Muñoz-Cánoves P**, Santos RA, Cabello-Verrugio C, Brandan E. Restoration of muscle strength in dystrophic muscle by angiotensin-1-7 through inhibition of TGF- β signalling. **Human Mol Genet.** 23:1237-49, 2013
- Sandri M, Barberi L, Bijlsma AY, Blaauw B, Dyar KA, Milan G, Mammucari C, Meskers CG, Pallafacchina G, Paoli A, Pion D, Roceri M, Romanello V, Serrano AL, Toniolo L, Larsson L, Maier AB, **Muñoz-Cánoves P**, Musarò A, Pende M, Reggiani C, Rizzuto R, Schiaffino S. Signalling pathways regulating muscle mass in ageing skeletal muscle. The role of the IGF1-Akt-mTOR-FoxO pathway. **Biogerontology** 14:303-23 2013
- Muñoz-Cánoves P**, Scheele C, Pedersen BK, Serrano AL. IL-6 myokine signaling in skeletal muscle: a double-edged sword? **FEBS J.** 2013
- Kharraz Y, Guerra J, Mann CJ, Serrano AL, **Muñoz-Cánoves P**. Macrophage plasticity and the role of inflammation in skeletal muscle repair. **Mediators Inflamm.** 2013:491497, 2013
- García-Prat L, Sousa-Victor P, **Muñoz-Cánoves P**. Functional dysregulation of stem cells during aging: a focus on skeletal muscle stem cells. **FEBS J.** 2013
- Vidal B, Ardite E, Suelves M, Ruiz-Bonilla V, Janué A, Flick J, Degen JL, Serrano AL, **Muñoz-Cánoves P**. Amelioration of Duchenne muscular dystrophy in mdx mice by elimination of matrix-associated fibrin-driven inflammation coupled to the α 5 β 2 leukocyte integrin receptor. **Human Mol Genet** 21:1989-2004, 2012
- Perdiguero E, Kharraz Y, Serrano AL, **Muñoz-Cánoves P**. MKP-1 coordinates ordered macrophage-phenotype transitions essential for stem cell-dependent tissue repair. **Cell Cycle** 11:877-86, 2012
- Liu QC, Zha X, Faralli H, Yin H, Louis-Jeune C, Perdiguero E, Pranckeviciene E, **Muñoz-Cánoves P**, Rudnicki MA, Brand M, Perez-Iratxeta C, Dilworth FJ. Comparative expression profiling identifies differential roles for Myogenin and p38 α MAPK signaling in myogenesis. **J. Cell Biol.** 4:386-97, 2012
- Ardite E, Perdiguero E, Vidal E, Gutarra S, Serrano AL, **Muñoz-Cánoves P**. PAI-1-regulated miR-21 defines a novel age-associated fibrogenic pathway in muscular dystrophy. **J. Cell Biol.** 196:163-75, 2012
- Sousa-Victor P, **Muñoz-Cánoves P**, Perdiguero E. Regulation of skeletal muscle stem cells through epigenetic mechanisms. **Toxicol Mech Methods.** 21(4):334-42, 2011
- Serrano AL, Mann CJ, Vidal B, Ardite E, Perdiguero E, **Muñoz-Cánoves P**. Cellular and molecular mechanisms regulating fibrosis in skeletal muscle repair and disease. **Curr Top Dev Biol.** 96:167-201, 2011
- Mann CJ, Perdiguero E, Kharraz Y, Aguilar S, Pessina P, Serrano AL, **Muñoz-Cánoves P**. Aberrant repair and fibrosis development in skeletal muscle. **Skelet Muscle.** 1:21, 2011
- Perdiguero E, Sousa-Victor P, Ruiz-Bonilla V, Jardí M, Caelles C, Serrano AL, **Muñoz-Cánoves P**. p38/MKP-1-regulated AKT coordinates macrophage transitions and resolution of inflammation during tissue repair. **J Cell Biol.** 195:307-22, 2011
- Serrano AL, **Muñoz-Cánoves P**. Regulation and dysregulation of fibrosis in skeletal muscle. **Exp Cell Res.** 316:3050-8, 2010
- Cuadrado A, Corrado N, Perdiguero E, Lafarga V, **Muñoz-Cánoves P**, Nebreda AR. Essential role of p18Hamlet/SRCAP-mediated histone H2A.Z chromatin incorporation in muscle differentiation. **EMBO J.** 29:2014-25, 2010
- Perdiguero E, Sousa-Victor P, Ballestar E, **Muñoz-Cánoves P**. Epigenetic regulation of myogenesis. **Epigenetics** 4:541-50, 2009
- Perdiguero E, **Muñoz-Cánoves P**. Volume on "SAPKs". Chapter by the Authors: Transcriptional regulation by the p38 MAPK signaling pathway in mammalian cells. **Curr Top Genetics.** 2008 (Posas F & Nebreda AR, Editors)
- Vidal B, Serrano AL, Tjwa M, Suelves M, Ardite E, De Mori R, Baeza B, Martínez de Lagrán M, Ruiz-Bonilla V, Jardí M, Gherardi R; Degen J, Christov C, Dierssen M, Dewerchin M, Carmeliet P, **Muñoz-Cánoves P**. Fibrinogen drives dystrophic muscle fibrosis via a TGF β /alternative macrophage activation pathway. **Genes & Dev,** 22:1747-52, 2008
- Ruiz-Bonilla V, Perdiguero E, Gresh L, Serrano AL, Sousa-Victor P, Jardí M, Wagner EF, **Muñoz-Cánoves P**. Efficient adult skeletal muscle regeneration in mice deficient in p38 β , p38 γ and p38 δ MAP kinases. **Cell Cycle.**7:2208-14, 2008

Serrano AL, Baeza-Raja B, Perdiguero E, Jardí M, **Muñoz-Cánoves P**. Interleukin-6 is an essential regulator of satellite cell-mediated skeletal muscle hypertrophy. **Cell Metab.** 7:33-44, 2008

Serrano AL, Jardí M, Suelves M, Klotman PE, **Munoz-Canoves P**. HIV-1 transgenic expression in mice induces selective atrophy of fast-glycolytic skeletal muscle fibers. **Front Biosci.** 13:2797-805, 2008

Suelves M, Vidal B, Serrano AL, Tjwa M, Roma J, López-Alemaný R, Luttun A, Martínez de Lagrán M, Díaz MA, Jardí M, Roig M, Dierssen M, Dewerchin M, Carmeliet P, **Muñoz-Cánoves P**. uPA deficiency exacerbates muscular dystrophy in mdx mice. **J. Cell Biol.** 178: 1039-51, 2007

Perdiguero E, Ruiz-Bonilla V, Serrano AL, **Muñoz-Cánoves P**. Genetic Deficiency of p38alpha Reveals its Critical Role in Myoblast Cell Cycle Exit: The p38alpha-JNK Connection. **Cell Cycle** 6: 1298-303, 2007

Perdiguero E, Ruiz-Bonilla V, Gresh L, Hui L, Ballestar E, Sousa-Victor P, Baeza-Raja B, Jardí M, Bosch-Comas A, Esteller M, Caelles C, Serrano AL, Wagner EF, **Munoz-Canoves P**. Genetic analysis of p38 MAP kinases in myogenesis: fundamental role of p38alpha in abrogating myoblast proliferation. **EMBO J.** 26:1245-56, 2007

Lluís F, Perdiguero E, Nebreda AR, **Muñoz-Cánoves P**. Regulation of skeletal muscle gene expression by p38 MAP kinases. **Trends Cell Biol.** 16:36-44, 2006

Nagamine Y, Medcalf RL, **Muñoz-Cánoves P**. Transcriptional and posttranscriptional regulation of the plasminogen activator system. **Thromb Haemost.** 93:661-675, 2005

Suelves M, Vidal B, Ruíz V, Baeza-Raja B, Díaz-Ramos MA, Cuartas I, Lluís F, Parra M, Jardí M, López-Alemaný R, Serrano A, **Muñoz-Cánoves P**. The plasminogen activation system in skeletal muscle regeneration: antagonistic roles of urokinase-type plasminogen activator (uPA) and its inhibitor (PAI-1) **Front. Biosci.** 10:2978-2985, 2005

Vidal B, Parra M, Jardí M, Saito S, Appella E, **Muñoz-Cánoves P**. The alkylating carcinogen N-methyl-N'-nitro-N-nitrosoguanidine activates the plasminogen activator inhibitor-1 gene through sequential phosphorylation of p53 by ATM and ATR kinases **Thromb Haemost.** 93: 584-91, 2005

Lluís F, Ballestar E, Suelves M, Esteller M, **Muñoz-Cánoves P**. E47 phosphorylation by p38 MAP kinase promotes MyoD/E47 association and muscle-specific gene transcription **EMBO J.** 24: 974-984, 2005

Lopez-Alemaný R, Suelves M, Diaz-Ramos A, Vidal B, **Muñoz-Cánoves P**. Alpha-enolase plasminogen receptor in myogenesis **Front. Biosci.** 10: 30-36, 2005

Baeza-Raja B, **Muñoz-Cánoves P**. p38 MAPK-induced NF- κ B activity is required for skeletal muscle differentiation. **Mol. Biol. Cell.** 15: 2013-2026, 2004

Suelves M., Lluís F, Ruiz V, Nebreda AR, **Muñoz-Cánoves P**. Phosphorylation of the transactivation domain of MRF4 by p38 MAPK mediates repression of specific myogenic genes. **EMBO J.** 33: 365-375, 2004

Figuroa A, Cuadrado A, Fan J, Atasoy L, Muscat GE, **Muñoz-Cánoves P**, Gorospe M, Muñoz A. Role of HuR in skeletal myogenesis through coordinate regulation of muscle differentiation genes. **Mol. Cell. Biol.** 23: 4991-5004, 2003

Lopez-Alemaný R, Suelves M, **Muñoz-Cánoves P**. Plasmin generation dependent on α -enolase-type plasminogen receptor is required for myogenesis. **Thromb Haemost.** 90: 724-733, 2003

López-Alemaný R, Redondo, JM, Nagamine Y, **Muñoz-Cánoves P**. Plasminogen activator inhibitor type-1 Inhibits insulin signaling by competing with avb3 integrin for vitronectin binding. **Eur J Biochem** 270: 814-821, 2003

Suelves M, López-Alemaný R, Lluís F, Anierte G, Serrano E, Parra M, Carmeliet P, **Muñoz-Cánoves P**. Plasmin activity is required for myogenesis in vitro and skeletal muscle regeneration in vivo. **Blood** 99: 2835-2844, 2002

Espinosa L, Santos S, Ingles-Esteve J, **Muñoz-Cánoves P**, Bigas A. p65-NF κ B synergizes with Notch to activate transcription by triggering cytoplasmic translocation of the nuclear receptor corepressor N-CoR. **J Cell Sci.** 115: 1295-303, 2002

Lluís F, Roma J, Suelves M, Parra M, Anierte G, Gallardo E, Illa I, Rodríguez L, Hughes SM, Carmeliet P, Roig M, **Muñoz-Cánoves P**. Urokinase-type plasminogen activator is required for skeletal muscle regeneration *in vivo*. **Blood** 97: 1703-1711, 2001

Ferrer I, Puig B, Goutan E, Gombau L, **Muñoz-Cánoves P**. Methylazoximethanol acetate-induced cell death in the granule cell layer of the developing cerebellum is associated with caspase-3 activation, but does not depend on the tissue-type plasminogen activator. **Neuroscience Lett.** 299: 77-80, 2001

Tzarfaty-Majar V, López-Aleman R, Feinstein Y, Gomabau L, Goldshmidt O, Soriano E, **Muñoz-Cánoves P***, Klar A*. Plasmin-mediated release of the guidance molecule F-spondin from the extracellular matrix **J. Biol. Chem.** 276: 28233-28241, 2001 (*co-corresponding authors).

Parra M, Jardí, Koziczak M, Nagamine Y, **Muñoz-Cánoves P**. p53 phosphorylation at serine 15 is required for transcriptional induction of the plasminogen activator inhibitor- 1 (PAI-1) gene by the alkylating agent MNNG. **J. Biol. Chem.** 276: 36303-36310, 2001

Parra M, Lluís F, Miralles F, Caelles C, **Muñoz-Cánoves P**. The cJun N-terminal kinase (JNK) signaling pathway mediates induction of urokinase-type plasminogen activator (uPA) by the alkylating agent MNNG. **Blood** 96:1415-24, 2000.

Invited Presentations (selection from recent)

- Gordon Research Conference on Plasminogen Activation. Ventura, California, USA, February 2010 (invited by Dr. T. Bugge)
- The Ottawa Conference on New Directions in Biology and Disease of Skeletal Muscle. Ottawa, Canada, May 2010 (invited by Dr. Michael Rudnicki)
- FASEB Meeting on Muscle Stem Cells. Arizona, USA, July 2010 (invited by Dr. Thomas Rando)
- Gordon Research Conferences Myogenesis, New Horizons for Myogenesis. Waterville Valley, NH, USA, August 2011 (invited by Drs. Helen Blau and Nadia Rosenthal)
- International Conference on Muscle Wasting 2011: "Molecular mechanisms of muscle wasting in health and disease". Ascona, Switzerland. September 2011 (invited by Drs. David Glass and Markus Ruegg)
- Frontiers in Muscle Biology Conference. New York, USA, June 2012 (invited by Drs. Vittorio Sartorelli, Kevin Campbell and Mary Baylies)
- New Directions in Biology of Muscle. New Orleans, June 2012 (invited by Dr. Melissa Spencer)
- Institute of Cell Biology, ETH Zürich. Zürich, Switzerland (invited by Sabine Werner)
- FASEB Research Conference on Skeletal Muscle Satellite & Stem Cells. Il Ciocco, Italy, to be held in August 2012 (invited by Drs. Grace Pavlath and Fabio Rossi)
- Gordon Conference on Myogenesis. Il Ciocco, Italy, July 2013 (invited by Drs. Peter Currie and Gabrielle Kardon)
- EMBO Workshop on Molecular mechanisms of muscle growth and wasting in health and disease. Ascona, Switzerland, September 2013 (invited by Drs. Markus Ruegg and David Glass)
- EMBO Conference on Myogenesis. Lecce, Italy, May 2014 (invited by Dr. Irene Bozzoni and Pier Lorenzo Puri)
- Leibniz Institute for Age Research. Jena, Germany, June 2014 (invited by Dr. K. Lenhard Rudolph)
- FASEB Meeting on muscle stem cells. Colorado, USA, July 2014 (invited by Dr. David Goldhamer and Dawn Cornelison)
- CSHL Conference on Molecular Genetics of Aging. Cold Spring Harbour Laboratory, New York, USA, September-October 2014 (invited by Dr. David Sinclair)
- "Stem Cells and Immunity" meeting. Tenerife, Spain, October 2014 (invited by Drs Carlos. Martinez-Alonso and Juan C. Izpisua-Belmonte)
- Sprott Stem Cell Center of the Ottawa Hospital. Ottawa, Canada, November 2014 (invited by Dr. Michael Rudnicki)
- Stem Cell Institute of University of Minnesota. Minneapolis, USA, November 2014 (invited by Dr. Rita Perlingeiro)
- Invited seminar, Instituto de Biomedicina de Valencia (CSIC), January 2015 (invited by. Dr. Nuria Flames)
- Invited seminar, Instituto de Investigaciones Biomédicas (CSIC), Madrid Spain. April 2015 (invited by Dr. Rosario Perona)
- Invited seminar, Max-Planck Institute, Bad Nauheim, Germany. April 2015 (invited by Dr. Thomas Braun)
- Else Kröner-Fresenius Symposium on Adult Stem Cells in Aging, Diseases, and Cancer. Sicily, Italy, May-June 2015 (invited by Dr. K. Lenhard Rudolph)
- Gordon Research Conference on Tissue Repair & Regeneration. New London, USA. June 2015 (invited by Drs. Boris Hinz and Enrique Amaya)
- Gordon Conference on Muscle Stem Cells. Il Ciocco, Italy. June 2015 (invited by Drs. Denis Guttridge and Gabrielle Kardon)
- EMBO Workshop on Molecular mechanisms of muscle growth and wasting in health and disease. Ascona, Switzerland. September 2015 (invited by Drs. David Glass and Markus Ruegg)
- XVI Congress of the Spanish Society for Cell Biology (SEBC). Sevilla, Spain, July 2015 (invited by Dr. Rosa M. Rios)
- International Meeting on Myology. Reggio Emilia, Italy. October 2015 (invited by Dr. Antonio Musaro)
- Congreso de Sociedad Española de Terapia Génica y Celular. San Sebastián, Spain. November 2015 (invited by Dr. Ander Izeta)

- 8th Cachexia Conference. Paris, France. December, 2015 (invited by Dr. David Glass)
- The Francis Crick Institute. London, UK. January 2016 (invited by Dr. Axel Behrens)
- Neurosciences Institute, CSIC-UMH. Alicante, Spain. January 2016 (invited by Dr. Angela Nieto)
- IFOM-IEO Milan, Italy. February 2016 (invited by Dr. Francesco Blasi)
- Institut NeuroMyoGène, Claude Bernard University. Lyon, France. January 2016 (invited by Dr. Benedicte Chazaud)
- The Batsheva de Rothschild Workshop on Skeletal and Cardiac Myogenesis. The Weizmann Institute, Rehovot, Israel. March 2016 (Invited by Drs. Talia Volk and Eldad Tzahor)
- IBIS Biomedicine Institute. Sevilla, Spain. May 2016 (invited by Dr. Rafael Fernández-Chacón)
- International Society of Stem Cell Research (ISSCR). San Francisco, USA. June 2016. (Invited by Dr. Sean Morrison)
- Molecular Mechanisms Modulating Development and Homeostasis of Skeletal Muscle in Health and Disease. Asilomar, USA. June 2016 (invited by Drs. Simon Hughes and David Glass)
- The Sanford Burham Discovery Institute. La Jolla, USA. June 2016 (invited by Drs. Alessandra Sacco and PierLorenzoPuri)
- 17th International Conference on Oxidative Stress Reduction, Redox Homeostasis & Antioxidants, Institut Pasteur, Paris. June 2016 (invited by Dr. Miria Ricchetti)
- Cell Symposia: Aging and Metabolism. Sitges, Spain. July 2016 (invited by Dr. Anne Brunet)
- Cellular Senescence: From Molecular Mechanisms to Therapeutic Opportunities. Weizmann Institute of Science, Rehovot, Israel. July 2016 (invited by Dr. Valery Krizhanovsky)
- FASEB Conference on Skeletal Muscle Satellite Cells and Regeneration. Keystone, USA. July 2016 (invited by Drs. Dawn Cornelison and Jyotsna Dhawan)
- First International Conference on Tissue Repair, Regeneration, and Fibrosis. Rhodes, Greece. September 2016 (invited by Dr. Thomas Wynn)
- LIMNA Symposium on stem cells and aging. Lausanne, Switzerland. September 2016 (invited by Dr. Johan Auwerx)
- International Conference on Epithelial Mesenchymal Transition in Cancer Research EMT, Stemness and Metastasis. Zhejiang University, Hangzhou, China. October 2016 (invited by Dr. Thomas Brabletz)
- Guangzhou Institute of Biomedicine and Health, "Workshop on Stem cell Research". Guangzhou, China. October 2016 (invited by Drs. Miguel Esteban and Duanqing Pei)
- The University of Hong Kong, Li Ka Shing Faculty of Medicine, School of Biomedical Sciences. Hong Kong. November 2016 (invited by Dr. Kathy Cheah)
- The Hong Kong University of Science & Technology. Hong Kong. November 2016 (invited by Dr. Zhenguo Wu)
- Institute of Molecular Medicine. Lisbon, Portugal. December 2016 (invited by Dr. Leonor Saude)
- International Society of Stem Cell Research. Basel, Switzerland. February 2017 (invited by Dr. Fiona Doetsch)
- Keystone Symposia on Fibrosis. Utah, USA. March 2017 (invited by Dr. Michael Karin)
- Institute of Myology. Myology School. Paris, France. June 2017 (invited by Dr. Frederic Relaix)
- Gordon Research Conference on Myogenesis. Il Ciocco, Italy. June 2017 (invited by Drs. Denis Guttridge/Benedicte Chazaud)
- Institute of Genetics and Biophysics. Naples, Italy. June 2017 (invited by Dr. Gabriella Minchiotti)
- Gordon Research Conference on Aging. Les Diablerettes, Switzerland. July 2017 (invited by Dr. Shin-Ichiro Imai)
- Aging Meeting. Halle, Germany. September 2017 (invited by Dr. Andreas Simm)
- Italian Society of Histology and Pathology Congress. Taormina, Italy. September 2017 (invited by Dr. Antonio Musarò)
- Aegean Conference on Stem Cells. Rhodes, Greece. September 2017 (invited by Dr. Kursad Tuksen)
- 33rd Ernst Klenk Symposium in Molecular Medicine: Tissue regeneration, wound healing and fibrosis. Cologne, Germany. October 2017 (invited by Drs. Sabine Ewing and Sabine Werner)
- Till & McCulloch Meeting on Stem Cells. Mont Tremblant, Canada. November 2017 (invited by Dr. Michael Rudnicki)
- ConBio Meeting. FEBS Lecture. Kobe, Japan. December 2017 (invited by Dr. Phillip Nagley)
- University of Copenhagen-Sports Medicine Center. Copenhagen, Denmark. January 2018 (invited by Dr. Michael Kjaer)
- International Congress on Cell Biology. Hyderabad, India. January 2018 (invited by Dr. Jyotsna Dhawan)
- Conference on Muscle Biology in Health and Disease. Singapore. February 2018 (invited by Dr. Reshma Taneja)
- Muscle Development, Regeneration and Disease Meeting. Berlin. April 2018 (invited by Dr. Carmen Birchmeier)
- University College London. London. May 2018 (invited by Drs. Saverio Tedesco and Patricia Salinas)
- 2nd International Conference on Tissue Repair and Regeneration, and Fibrosis. Crete, Greece. May 2018 (invited by Dr. Thomas Wynn)
- **Keynote Lecture:* American Aging Association Annual Meeting. Philadelphia, USA. May 2018 (invited by Dr. Rafael de Cabo).

- FASEB Conference on Muscle Stem Cells. Colorado, USA. July 2018 (invited by Drs. Krauss, Brack and Cheung)
- Jena Aging Meeting (JAM). Jena, Germany. September 2018 (invited by Drs. Rudolph and Morrison)
- EMBO Meeting on Cellular Signalling. Cavtat, Croatia. September 2018 (invited by Dr. Maria Sibilija)
- **Keynote Lecture: Conference on Molecular mechanisms of muscle wasting during aging and disease*". Ascona, Switzerland. September 2018 (invited by Drs. David Glass and Markus Ruegg)
- 9th Annual Alliance for Healthy Aging Conference of the Mayo Clinic. Rochester, USA. October 2019 (Invited by Dr. James Kirkland)
- Cochin Institute. Paris, France. October 2018 (invited by Dr. Pascal Maire)
- Columbia University. New York, USA. November 2018 (invited by Dr. Emmanuelle Passegué)
- **Keynote Lecture: The 11th Guangzhou International Conference on Stem Cell and Regenerative Medicine*. Guangzhou, China. November 2018 (invited by Drs. Duanqing Pei and Miguel Esteban)
- University of Pennsylvania, Institute of Regenerative Medicine. Philadelphia, USA. January 2019 (invited by Dr. Foteini Mourkioti)
- European Neuromuscular Disease Society. Amsterdam, The Netherlands. January 2019 (invited by Drs Jenny Morgan and Ketan Patel)
- International Symposium of "Living in Space". Japan Aerospace Exploration Agency (JAXA). Kyoto, Japan. March 2019 (invited by Dr. Atsuko Sehara)
- Riken Institute. Kobe, Japan. March 2019 (invited by Dr. Fumio Matsuzaki)
- Osaka University. Osaka, Japan. March 2019 (invited by Dr. So-ichiro Fukada)
- National Institute of Aging (NIA)-National Institutes of Health (NIH). Baltimore, USA. March 2019 (invited by Drs. Luigi Ferrucci and Rafael de Cabo)
- International Conference on Aging Biology. Beijing, China. To be held April 2019 (invited by Dr. Guanghui Liu)
- Gordon Research Seminar Conference on Myogenesis. Il Ciocco, Italy. To be held June 2019 (invited by Dr. Benedicte Chazaud)
- Marabou's Foundation. Meeting on Nutrition and Stem Cell Integrity in Ageing. Stockholm, Sweden). To be held June 2019 (invited by Dr. Bo Angelin)
- International Society of Stem Cell Research (ISSCR). Los Angeles, USA. To be held June 2019 (invited by Dr. Douglas Melton)
- **Keynote Lecture: EMBO Conference. 10th International Fission Yeast Meeting*. Barcelona, Spain. To be held July 2019 (invited by Dr. Jose Ayté)
- FEBS Workshop Aging and Regeneration. Innsbruck, Austria. To be held September 2019 (invited by Dr. Pidder Jansen)
- **Keynote Lecture: Frontiers Conference on "Skeletal muscle: development, regeneration and disease"*. American Association of Cell Biology. Costa Rica. To be held September 2019 (invited by Drs. Alessandra Sacco, Peter Zammit and Fabio Rossi)
- 3RD International stem cell meeting. Crete, Greece. To be held October 2019 (invited by Drs. Kursad Turksen and Jeff Dilworth)
- Des Treilles Foundation Conference on Stem cells and stress response mechanisms. Les Arcs-Draguignan, France. To be held October 2019 (invited by Dr. Emmanuelle Passegué)
- Keystone Symposia on Intra- and Intercellular Mechanisms of Aging. Vancouver, Canada. To be held February 2020 (invited by Drs. Drs. Malene Hansen, Johan Auwerx and Heinrich Jasper)

COMPETITIVE RESEARCH GRANTS (Last 5 years)

- **Title:** Innovation platforms for advanced therapies of the future. Acronym: UPGRADE. **Organism:** European Union (H2020); **Duration:** 01/01/2019-31/12/2023. **Grant Coordinator:** Luigi Naldini; **Principal Investigator:** Pura Muñoz Cánoves
- **Title:** Understanding muscle regenerative decline with aging. **Organism:** Health Research -La Caixa; **Duration:** 01/11/2018-31/10/2021. **Principal Investigator:** Pura Muñoz Cánoves
- **Title:** Cellular senescence, a target for combating Duchenne Muscular Dystrophy. **Organism:** Muscular Dystrophy Association (MDA)-USA; **Duration:** 01/08/2018-31/07/2021. **Principal Investigator:** Pura Muñoz Cánoves
- **Title:** Tissue Regeneration and aging. **Organism:** European Research Council (ERC)- ERC Advanced Grant; **Duration:** 01/11/2017-31/10/2022. **Principal Investigator:** Pura Muñoz Cánoves

- **Title:** Understanding and reversing muscle stem cell regenerative decline in DMD. **Organism:** Muscular Dystrophy Association (MDA)-USA; **Duration:** 01/08/2016-31/07/2019. **Principal Investigator:** Pura Muñoz Cánoves
- **Title:** Understanding muscle stem cell function. **Organism:** Association française pour les myopathies (AFM)-France; **Duration:** 01/05/2016-30/04/2018). **Principal Investigator:** Pura Muñoz Cánoves
- **Title:** Understanding skeletal muscle regenerative decline with aging (Ref.: SAF2015-67369-R). **Organism:** Spanish Ministry of Economy (MINECO)-Spain **Duration:** 01/01/2016/-31/12/2018 **Principal Investigator:** Pura Muñoz Cánoves
- **Title:** Molecular mechanisms of brain and muscle stem cell function in aging and neurodegeneration (Ref: 2015-2/06) **Organism:** Spanish Ministry of Economy (MINECO), ISCIII. Proyecto Colaborativo de la Convocatoria de Proyectos Colaborativos Centrales y de Investigación Traslacional - CIBERNED 2015-2. **Duration:** 01/03/2016-28/02/2018. **Grant Coordinator:** Pura Muñoz Cánoves. **Principal Investigator:** Pura Muñoz Cánoves
- **Title:** Molecular links between diabetes and neurodegenerative disorders (Ref.: PIE14/00061). **Organism:** Spanish Ministry of Economy (MINECO), ISCIII. Integrated Projects of Excellence Call Scientific and Technological Profile of the Participating Groups. **Duration:** 01/01/2015-31/12/2017. **Grant Coordinator:** Ángel Raya. **Principal Investigator:** Pura Muñoz Cánoves
- **Title:** Understanding the basis of muscle regeneration. **Organism:** AGAUR (Generalitat de Catalunya) “Group of Excellence” 2014 SGR 102. **Duration:** 01/01/2015-31/12/2017. **Principal Investigator:** Pura Muñoz Cánoves
- **Title:** New regulators of skeletal muscle growth and wasting. **Organism:** Association française pour les myopathies (AFM)-France; **Duration:** 01/07/2014-28/02/2017. **Principal Investigator:** Pura Muñoz Cánoves
- **Title:** Stimulating Intrinsic Repair for DMD. **Organism:** European Research Projects on Rare Diseases **Duration:** 01/01/2014-31/12/2016. **Grant Coordinator:** Michael Rudnicki; **Principal Investigator:** Pura Muñoz Cánoves.
- **Title:** Improving muscle recovery in DMD. **Organism:** Duchenne Parent Project-Netherlands; **Duration:** 01/01/2014-31/12/2015. **Principal Investigator:** Pura Muñoz Cánoves.
- **Title:** Optimization of regeneration and stem cell transplantation therapies for degenerative muscular dystrophies. **Organism:** La Marató-TV3; **Duration:** 01/01/2013-31/12/2015. **Principal Investigator:** Pura Muñoz Cánoves.
- **Title:** Regulation and dysregulation of skeletal muscle regeneration and growth. **Organism:** Spanish Ministry of Science (MINECO); **Reference:** SAF2012-38547; **Duration:** 01/01/2013-31/12/2015. **Principal Investigator:** Pura Muñoz Cánoves.
- **Title:** Understanding and combating inflammation-driven fibrosis in muscular dystrophy. **Organism:** Association française pour les myopathies (AFM)-France; **Duration:** 01/07/2012-30/06/2014. **Principal Investigator:** Pura Muñoz Cánoves.
- **Title:** Cellular mechanisms of fibrosis development in muscular dystrophies. **Organism:** Muscular Dystrophy Association (MDA)-USA; **Duration:** 01/02/2012-31/12/2014. **Principal Investigator:** Pura Muñoz Cánoves
- **Title:** Cell Biological Analysis of Skeletal Muscle Differentiation. **Organism:** AGAUR (Generalitat de Catalunya) “Group of Excellence” **Duration:** 01/01/2010-31/12/2013. **Principal Investigator:** Pura Muñoz Cánoves
- **Title:** Mechanisms regulating skeletal muscle regeneration and growth. **Organism:** Spanish Ministry of Science; **Reference:** SAF2009-09782; **Duration:** 01/01/2010-31/12/2012; **Principal Investigator:** Pura Muñoz Cánoves
- **Title:** Activation of vasculature associated stem cells and muscle stem cells for the repair and maintenance of muscle tissue. **Acronym:** ENDOSTEM. **Organism:** European Union (FP7); **Duration:** 01/01/2010-31/12/2014. **Grant Coordinator:** David Sassoon; **Principal Investigator:** Pura Muñoz Cánoves
- **Title:** Optimization of stem cell therapy for disease of epithelia and skeletal muscle through combined basic and applied research. **Acronym:** OPTISTEM. **Organism:** European Union (FP7); **Duration:** 01/01/2009-30/06/2014. **Grant Coordinator:** Giulio Cossu; **Principal Investigator:** Pura Muñoz Cánoves
- **Title:** Optimization of stem cell therapies for degenerative myopathies. **Organism:** Spanish Ministry of Science; Ref: PLE2009-0124. **Duration:** 01/11/2009-30/09/2013 **Principal Investigator:** Pura Muñoz Cánoves
- **Title:** Understanding and combating age-related muscle weakness. **Acronym:** MYOAGE. **Organism:** European Union (FP7); **Duration:** 01/01/2009-31/12/2013. **Grant Coordinator:** Gillian Butler-Browne; **Principal Investigator:** Pura Muñoz Cánoves

Patents

Inventors: Perdiguero E, Serrano AL, Raya RM, Muñoz-Cánoves P

Title: New treatment for muscular dystrophies. Ref. number: P2003EP00

Organisms: Universitat Pompeu Fabra and Institució Catalana de Recerca i Estudis Avançats (ICREA).

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Countries of extension: Europe

Inventors: Perdiguero E, Serrano AL, Raya RM, Sousa-Victor P, Muñoz-Cánoves P
Title: Mammal sestrins in the treatment of muscle wasting. Ref. number: 11382269.6
Organisms: Universitat Pompeu Fabra and Institució Catalana de Recerca i Estudis Avançats (ICREA)
Countries of extension: Europe

Prospera Biotech: Spin-off company of UPF-ICREA (co-founder with four additional scientists).