PERSONAL INFORMATION

Francesca D'Avanzo

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WORK EXPERIENCE

09/05/2016 - present

Collaborator of the Project " Paediatric neurodegenerative disorders: a preclinical therapeutic strategy by nanoparticles delivery and identification of biomarkers of pathogenesis and treatment efficacy for a personalized medicine approach"

Pediatric Research Institute, Corso Stati Uniti 4, 35127 Padua, Italy

01/09/2013 – 31/03/2016

Collaborator of the European Project "Inherited NeuroMetabolic Disease Information Network" (InNerMeD-I-Network, 2012 12 12, Second Health Programme 2008-2013)

Brains for Brain Foundation Onlus - Via Giustiniani, 3 - Padova

01/05/2012 – 30/04/2013

Research fellow

University of Padova - Via 8 Febbraio, 2 – Padova. Laboratory of Diagnosis and Therapy of Lysosomal Disorders - Department of Women's and Children's Health

01/04/2010 – 31/03/2011

Scholarship holder

University of Padova - Via 8 Febbraio, 2 – Padova. Laboratory of Diagnosis and Therapy of Lysosomal Disorders - Department of Women's and Children's Health

01/01/2010 – 31/12/2012

PhD Student in "Developmental Medicine and Health Planning Sciences. Curriculum: Rare Diseases; Genetics, Biology and Biochemistry"

University of Padova - Via 8 Febbraio, 2 – Padova. Laboratory of Diagnosis and Therapy of Lysosomal Disorders - Department of Women's and Children's Health

17/10/2008 - 31/12/2009

Internship as graduate student

University of Padova - Via 8 Febbraio, 2 – Padova. Laboratory of Diagnosis and Therapy of Lysosomal Disorders - Department of Women's and Children's Health

10/01/2008 - 16/10/2008

Master's degree internship

University of Padova - Via 8 Febbraio, 2 – Padova. Laboratory of Diagnosis and Therapy of Lysosomal Disorders - Department of Women's and Children's Health

EDUCATION AND TRAINING

12/09/2013

Professional course: "Innovative technologies in molecular medicine"

EQF level: 7

University of Padova - Via 8 Febbraio, 2 - Padova

17/04/2013 **PhD in "Developmental Medicine and Health Planning Sciences. Curriculum: Rare Diseases; Genetics, Biology and Biochemistry"** EQF level: 8

University of Padova - Via 8 Febbraio, 2 - Padova

Thesis title: Analysis of Hunter syndrome by RNA-sequencing

16/10/2008 **Master Degree in Molecular Biology (110/110)** EQF level: 7

University of Padova - Via 8 Febbraio, 2 - Padova

Thesis title: Evaluation of possible therapeutic strategies for the neurological involvement in Mucopolysaccharidosis type II

29/09/2006 **Bachelor Degree in Molecular Biology (110/110 cum laude)** EQF level: 6

University of Padova - Via 8 Febbraio, 2 - Padova

Thesis title: *In silico* analisys of *Drosophila melanogaster* gene Timeless

2003 **Scientific High School Diploma (98/100)** EQF level: 4

Liceo Scientifico Statale di Rotonda (Pz)

PERSONAL SKILLS

Mother tongue(s): Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	B2	B2	B2	B2
Esperanto	B2	B2	B2	B2	B2

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user

Job-related skills

Analysis of RNA-Sequencing data
DNA and RNA purification, PCR, q-RT-PCR
Fluorimentric, Luminometric and Enzymatic assays
Cell cultures
Istology, Istochemistry, Immunoistochemistry, Immunofluorescence
Usage of adenoviral vectors
Usage of animal models

Digital competence: Good knowledge of Microsoft office tools. Basic knowledge of the programming languages Matlab, Perl, HTML R, MySQL. European Computer Driving Licence

Driving licence: B

ADDITIONAL INFORMATION

Research interests

Creation of an Information Network on inherited NeuroMetabolic Diseases

Evaluation of new therapeutic strategies for the neurological involvement in Mucopolysaccharidosis type by adenoviral vectors, liposomes, neural stem cells and nanoparticles

Pathophysiology of the neurological involvement in Mucopolysaccharidosis type I and II mouse models

Research of molecular markers of pathophysiology in Mucopolysaccharidosis type II

Research of molecular markers of therapeutic efficiency of Enzyme Replacement Therapy in patients affected by Mucopolysaccharidosis type II

Abstract and Participation to Conferences

Date	16-19 March 2016
Place	Madrid, Spain
Conference	10th Brains for Brain European Workshop and InNerMeD Information Network 3rd Open Conference
Date	30 September – 4 October 2015
Place	Pozzuoli (NA), Italy
Conference	20th European Study Group on Lysosomal Diseases Workshop
Type of Contribution 1	Abstract and Poster
Contribution 1	D'AVANZO F, Bellettato CM, Bartoloni F, Barić I, Garcia Cazorla A, i Dali C, Ceci A, Scarpa M on behalf of all InNerMeD partners. Inherited NeuRoMetabolic Diseases database from InNerMeD-I-network EU project.
Type of Contribution 2	Abstract and Poster
Contribution 2	D'AVANZO F, Zanetti A, Campagna D, Vitulo N, Marchioretto L, Forcato C, Gamba PG, Özbek MN, Önenli-Mungan N, Quartel A, Scarpa M, Tomanin R, Valle G. Search for genetic and epigenetic determinants in MPS VI clinical phenotype: NGS analysis of two monozygotic twins.
Date	11-13 May 2015
Place	Zagreb, Croatia
Conference	South-eastern Europe InNerMeD Networking meeting
Date	16-18 March 2015
Place	Zagreb, Croatia
Conference	Diagnostic laboratory workshop for the diagnosis of Pompe and Fabry disease
Type of Contribution	Poster
Contribution	Scarpa M, D'AVANZO F, Baric I, Ceci A, Garcia Cazorla A, i Dali C, Lampe C on behalf of all InNerMeD partners. Inherited NeuRoMetabolic Diseases Information Network (InNerMeD-I-Network).
Date	28 February 2015
Place	Zagreb, Croatia
Conference	Rare Disease Day 2015
Type of Contribution	Poster
Contribution	Scarpa M, D'AVANZO F, Baric I, Ceci A, Garcia Cazorla A, i Dali C, Lampe C on behalf of all InNerMeD partners. Inherited NeuRoMetabolic Diseases Information Network (InNerMeD-I-Network).
Date	5-7 February 2015
Place	Frankfurt, Germany
Conference	9th Brains for Brain European Workshop and InNerMeD Information Network 2nd Open Conference
Date	29 November 2014
Place	Zagreb, Croatia
Conference	43rd Symposium of the Croatian Pediatric Neurology Society
Type of Contribution	Poster
Contribution	Scarpa M, D'AVANZO F, Baric I, Ceci A, Garcia Cazorla A, i Dali C, Lampe C on behalf of all InNerMeD partners. Inherited NeuRoMetabolic Diseases Information Network (InNerMeD-I-Network).
Date	31st October- 1st November 2014
Place	Belgrade, Serbia
Conference	Genomics of Rare Diseases Serbordisinn &2014 Golden Helix Symposium
Type of Contribution	Poster
Contribution	Scarpa M, D'AVANZO F, Baric I, Ceci A, Garcia Cazorla A, i Dali C, Lampe C on behalf of all InNerMeD partners. Inherited NeuRoMetabolic Diseases Information Network (InNerMeD-I-Network).
Date	23-26 October 2014

Place	Zagreb, Croatia
Conference	28th Annual European Society for Phenylketonuria Conference
Type of Contribution	Poster
Contribution	Scarpa M, D'AVANZO F, Baric I, Ceci A, Garcia Cazorla A, i Dali C, Lampe C on behalf of all InNerMeD partners. Inherited NeuRoMetabolic Diseases Information Network (InNerMeD-I-Network).
Date	16-19 October 2014
Place	Dubrovnik, Croatia
Conference	XI Congress of the Croatian Paediatric Society with international participation
Type of Contribution	Poster
Contribution	Scarpa M, D'AVANZO F, Baric I, Ceci A, Garcia Cazorla A, i Dali C, Lampe C on behalf of all InNerMeD partners. Inherited NeuRoMetabolic Diseases Information Network (InNerMeD-I-Network).
Date	2-4 October 2014
Place	Castellaneta (BA), Italy
Conference	VII Foresight Training Course - European Projects Forum “Nex-t-work”
Type of Contribution	Poster
Contribution	Scarpa M, D'AVANZO F, Baric I, Ceci A, Garcia Cazorla A, i Dali C, Lampe C on behalf of all InNerMeD partners. Inherited NeuRoMetabolic Diseases Information Network (InNerMeD-I-Network).
Date	23-27 September 2014
Place	Bled, Slovenia
Conference	10th International Congress “New Developments in the Assessment of Early Brain Damage – 30 Years Later”
Type of Contribution	Poster
Contribution	Scarpa M, D'AVANZO F, Baric I, Ceci A, Garcia Cazorla A, i Dali C, Lampe C on behalf of all InNerMeD partners. Inherited NeuRoMetabolic Diseases Information Network (InNerMeD-I-Network).
Date	12-13 September 2014
Place	Bucharest, Romania
Conference	European Paediatric Neurology Society (EPNS) Research Meeting
Type of Contribution	Poster
Contribution	Scarpa M, D'AVANZO F, Baric I, Ceci A, Garcia Cazorla A, i Dali C, Lampe C on behalf of all InNerMeD partners. Inherited NeuRoMetabolic Diseases Information Network (InNerMeD-I-Network).
Date	13-17 August 2014
Place	Bahia, Brazil
Conference	13th International Symposium on MPS and Related Disease
Type of Contribution	Abstract and Poster
Contribution	Rigon L, Salvalaio M, Tosi G, Belletti D, D’AVANZO F, Ruozi B, Vandelli MA, Forni F, Scarpa M, Tomanin R. BBB Crossing in Lysosomal Storage Disorders: a Nanoparticle-Based Approach
Date	13-14 June 2014
Place	Majorca, Spain
Conference	SENEP Congress (Sociedad Española de Neurología Pediátrica)
Type of Contribution	Poster
Contribution	Scarpa M, D'AVANZO F, Baric I, Ceci A, Garcia Cazorla A, i Dali C, Lampe C on behalf of all InNerMeD partners. Inherited NeuRoMetabolic Diseases Information Network (InNerMeD-I-Network).
Date	7-9 march 2014
Place	Frankfurt, Germany
Conference	8th Brains for Brain European Workshop and InNerMeD Information Network 1st Open Conference
Type of Contribution	Abstract
Contribution	Fusar Poli E, Zalfa C, D'AVANZO F, Tomanin R, Carlessi L, Bossi M, Nodari LR, Binda E, Marmiroli P, Scarpa M, Delia D, Vescovi AL and De Filippis L (2013). Murine neural stem cells model Hunter disease in vitro: glial cell-mediated neurodegeneration as a possible mechanism involved.
Date	27-28 February 2014
Place	Zagreb, Croatia

Conference	3rd National Conference on Rare Diseases and 3rd Croatian Symposium on Rare Diseases
Type of Contribution	Poster
Contribution	Scarpa M, D'AVANZO F, Baric I, Ceci A, Garcia Cazorla A, i Dali C, Lampe C on behalf of all InNerMeD partners. Inherited NeuRoMetabolic Diseases Information Network (InNerMeD-I-Network).
Date	14 February 2014
Place	Zagreb, Croatia
Conference	Croatian National Epilepsy Day 2014
Type of Contribution	Poster
Contribution	Scarpa M, D'AVANZO F, Baric I, Ceci A, Garcia Cazorla A, i Dali C, Lampe C on behalf of all InNerMeD partners. Inherited NeuRoMetabolic Diseases Information Network (InNerMeD-I-Network).
Date	28-29 November 2013
Place	Naples, Italy
Conference	V National Joint Congress of SIMMESN and SIMGePeD
Type of Contribution	Abstract and Poster
Contribution	Scarpa M, D'AVANZO F, Baric I, Ceci A, Garcia Cazorla A, i Dali C, Lampe C on behalf of all InNerMeD partners. Inherited NeuRoMetabolic Diseases Information Network (InNerMeD-I-Network).
Date	27-29 November 2013
Place	Venice, Italy
Conference	Nanotech Italy 2013
Type of Contribution	Abstract and Poster
Contribution	Tosi G, Rigon L, Salvalaio M, Belletti D, D'AVANZO F, Ruozi B, Vandelli MA, Forni F, Scarpa M, Tomanin R. Blood-Brain barrier crossing of high molecular weight molecules mediated by Nanoparticles: a potential approach to treat neurological Lysosomal Storage Disorders
Date	25-29 September 2013
Place	Leibnitz, Austria
Conference	19th European Study Group on Lysosomal Diseases Workshop
Type of Contribution 1	Abstract and Poster
Contribution 1	Scarpa M, D'AVANZO F, Baric I, Ceci A, Garcia Cazorla A, i Dali C, Lampe C on behalf of all InNerMeD partners. Inherited NeuRoMetabolic Diseases Information Network (InNerMeD-I-Network).
Type of Contribution 2	Abstract and Poster
Contribution 2	Salvalaio M, Tosi G, Rigon L, Belletti D, D'AVANZO F, Ruozi B, Vandelli MA, Forni F, Scarpa M, Tomanin R. A Nanoparticle-based approach for drug delivery to the brain in Lysosomal Storage Disorders
Date	6th November 2012
Place	Padova, Italy
Conference	"Il Cervello tra Evoluzione e Malattia"
Date	13th January 2012
Place	Padova, Italy
Conference	"Calcolo Scientifico e Bioinformatica oggi"
Date	17-19 November 2011
Place	Padova, Italy
Conference	XXXVII Congresso Nazionale SINP (Società Italiana di Neurologia Pediatrica)
Type of Contribution	Abstract and Poster
Contribution	Salvalaio M, D'AVANZO F, Rigon L, Zaccariotto E, Albiero A, Valle G, Tomanin R and Scarpa M. Identificazione dei processi implicati nella neurodegenerazione mediante tecnologia RNA-Seq.
Date	13-16 November 2011
Place	Milan, Italy
Conference	"XIV Congresso Nazionale Società Italiana di Genetica Umana"
Type of Contribution	Abstract and e-Poster
Contribution	D'AVANZO F, Zanetti A, Salvalaio M, Rigon L, Albiero A, Campanaro S, Valle G, Scarpa M and Tomanin R. Analisi del trascrittoma di cellule hunter mediante RNA-Seq: studi in vitro sulla patogenesi

e sull'efficacia della terapia enzimatica sostitutiva.

Date	3-6 September 2011
Place	Langvik, Finland
Conference	18th European Study Group on Lysosomal Diseases Workshop
Type of Contribution	Abstract and Poster
Contribution	Zanetti A, D'AVANZO F, Salvalaio M, Rigon L, Albiero A, Campanaro S, Valle G, Scarpa M and Tomanin R. RNA-seq transcriptome profiling of Hunter cells: in vitro studies on pathogenesis and ERT efficacy

Date	14th January 2011
Place	Padova, Italy
Conference	CGH e Sequenziamento

Date	3-5 June 2010
Place	Padova, Italy
Conference	VI Seminario Società Italiana di Biofisica e Biologia Molecolare: "Frontiers in molecular biology"

Date	11th May 2010
Place	Milan, Italy
Conference	I Simposio Italiano di Luciferasi e Luminometria

Date	15-19 March 2010
Place	Padova, Itay
Conference	Settimana Internazionale del Cervello

Date	5-7 March 2010
Place	Frankfurt, Germany
Conference	4th European Workshop - Brains for Brain
Type of Contribution	Abstract
Contribution	D'AVANZO F, Zaccariotto E, van Weperen W, Rip J, Gaillard P, Scarpa M and Tomanin R. Delivering IDS enzyme to MPSII mouse brain through liposomal carriers.

Date	14-15 September 2009
Place	Piazzola sul Brenta (PD), Italy
Conference	Meeting Malattie Neurodegenerative e virus

Date	10-13 September 2009
Place	Bad Honnef, Germany
Conference	17th European Study Group on Lysosomal Diseases Workshop
Type of Contribution	Abstract and Poster
Contribution	D'AVANZO F, Salvalaio M, Fabris M, Leon A, Scarpa M and Tomanin R. In vitro evaluation of possible therapeutic approaches for the neurological involvement in mucopolysaccharidosis type II mouse model.

Date	8-10 May 2009
Place	Milan, Italy
Conference	4th Meeting on the Molecular Mechanisms of Neurodegeneration
Type of Contribution	Abstract
Contribution	Salvalaio M, Tomanin R, Legnini E, D'AVANZO F, D'Arrigo A, Leon A and Scarpa M. Studies on the pathophysiology of neurological involvement in a mucopolysaccharidosis type I mouse model.

Publications

Giannuzzi V, Devlieger H, Margari L, Odlind VL, Ragab L, Bellettato CM, D'AVANZO F, Lampe C, Schüttler K, Cassis L, Cortès-Saladelafont E, Garcia-Cazorla A, Barić I, Cvitanović-Šojat L, Fumić K, I Dali C, Bartoloni F, Bonifazi F, Scarpa M, Ceci A (2016). The ethical framework for performing research with rare inherited neurometabolic disease patients. EUROPEAN JOURNAL OF PEDIATRICS. Under revision

Zalfa C, Verpelli C, D'AVANZO F, Tomanin R, Vicidomini C, Cajola L, Manara R, Sala C, Scarpa M, Vescovi AL, De Filippis L. Glial degeneration with oxidative damage drives neuronal demise in MPSII disease. CELL DEATH AND DISESASE. Under revision

Salvalaio M, Rigon L, D'AVANZO F, Legnini E, Balmaceda Valdez V, Zanetti A, Tomanin R (2016). Targeting Brain Disease in Mucopolysaccharidoses. In: Giovanni Tosi editor. Nanomedicine and Neuromedicine. Bentham Science Publishers. In press

Salvalaio M, Rigon L, Belletti D, D'AVANZO F, Pederzoli F, Ruozi B, Marin O, Vandelli MA, Forni F, Scarpa M, Tomanin R, Tosi G (2016). Targeted Polymeric Nanoparticles for Brain Delivery of High Molecular Weight Molecules in Lysosomal Storage Disorders. PLOS ONE; 11(5):e0156452. doi:10.1371/journal.pone.0156452.

Cassis L, Cortès-Saladelafont E, Molero-Luis M, Yubero D, González MJ, Herrero A, Fons C, Jou C, Sierra C, Castejon Ponce E, Ramos F, Armstrong J, O'Callaghan MM, Casado M, Montero R, Olivas SM, Artuch R, Barić I, Bartoloni F, Bellettato CM, Bonifazi F, Ceci A, Cvitanović-Šojat L, Dali CI, D'AVANZO F, Fumic K, Giannuzzi V, Lampe C, Scarpa M, Cazorla ÁG (2015). Review and evaluation of the methodological quality of the existing guidelines and recommendations for inherited neurometabolic disorders. ORPHANET JOURNAL OF RARE DISEASES;10:164. doi: 10.1186/s13023-015-0376-9

Rigon L, Salvalaio M, Tosi G, Belletti D, D'AVANZO F, Ruozi B, Vandelli MA, Forni F, Scarpa M and Tomanin R (2014). BBB Crossing in Lysosomal Storage Disorders: a Nanoparticle-Based Approach. Abstracts of Free Communications Accepted for Presentation at the 13th International Symposium on Mucopolysaccharidoses and Related Diseases, Sauipe, Bahia, Brazil, August 13-17, 2014. JOURNAL OF INBORN ERRORS OF METABOLISM & SCREENING, January 2014; 2, doi:10.1177/2326409814538909

Tomanin R, Zanetti A, D'AVANZO F, Rampazzo A, Gasparotto N, Parini R, Pascarella A, Concolino D, Procopio E, Fiumara A, Borgo A, Frigo AC and Scarpa M (2014). Clinical efficacy of Enzyme Replacement Therapy in paediatric Hunter patients, an independent study of 3.5 years. ORPHANET JOURNAL OF RARE DISEASES; 9:129. doi:10.1186/s13023-014-0129-1

Fusar Poli E, Zalfa C, D'AVANZO F, Tomanin R, Carlessi L, Bossi M, Nodari LR, Binda E, Marmiroli P, Scarpa M, Delia D, Vescovi AL and De Filippis L (2013). Murine neural stem cells model Hunter disease in vitro: glial cell-mediated neurodegeneration as a possible mechanism involved. CELL DEATH AND DISESASE; 4:e906. doi:10.1038/cddis.2013.430

Mazzoccoli G, Tomanin R, Mazza T, D'AVANZO F, Salvalaio M, Rigon L, Zanetti A, Pazienza V, Francavilla M, Giuliani F, Vinciguerra M and Scarpa M (2013). Circadian transcriptome analysis in human fibroblasts from Hunter syndrome and impact of iduronate-2-sulfatase treatment. BMC MED GENOMICS; 6:37. doi:10.1186/1755-8794-6-37

Tomanin R, Bellettato CM, D'AVANZO F, Zanetti A, Ceci A, Begley D, Scarpa M (2013). Personalized Medicine In Rare Paediatric Neurometabolic Diseases. In: Silvia Mandel editor: "Neurodegenerative Diseases: Integrative PPPM Approach as the Medicine of the Future". (book series: Olga Golubnitschaja editor. Advances in Predictive, Preventive and Personalised Medicine). Springer; 2:311-327

Tomanin R, Zanetti A, Zaccariotto E, D'AVANZO F, Bellettato CM and Scarpa M (2012). Gene therapy approaches for Lysosomal Storage Disorders, a good model for the treatment of mendelian diseases. ACTA PAEDIATRICA; 101(7):692-701. doi:10.1111/j.1651-2227.2012.02674.x

Scarpa M, Zaccariotto E, D'AVANZO F, van Weperen W, Rip J, Gaillard P and Tomanin R (2011). First evidence of efficacy in brain following intravenous injections of Brain-Targeted Liposome-Enzyme in the MPS II mouse model. MOLECULAR GENETICS AND METABOLISM; 102: S40-S40; doi:10.1016/j.ymgme.2010.11.135 - Abstract

Scarpa M, Zanetti A, D'AVANZO F, Salvalaio M, Rigon L, Albiero A, Campanaro S, Valle G and Tomanin R (2011). RNA-seq Transcriptome Profiling Of Primary Hunter Cells Following Treatment With Recombinant IDS As A First Step For Identification Of ERT Efficacy Markers. MOLECULAR GENETICS AND METABOLISM; 102, S40-S40; doi:10.1016/j.ymgme.2010.11.136 – Abstract