

**FORMATO EUROPEO
PER IL CURRICULUM
VITAE**



INFORMAZIONI PERSONALI

Nome **ELVIRA DE LEONIBUS**
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Nazionalità ITALIANA
Data di nascita 1973

ESPERIENZA LAVORATIVA

CURRENT POSITIONS

2022- Present
Professor in charge, Psycobiology and Physiological Psychology Course, Faculty of Medicine and Surgery, University of "Tor Vergata", Rome, Italy

2023- Present
Research Director, Neuropsychopharmacology Laboratory, Institute of Cellular Biology and Biochemistry (IBBC) (previously called Institute of Cellular Biology and Neurobiology), Monterotondo (RM), Italy

2011 – Present
PI (Faculty), Behavioral Genetics laboratory, Telethon Institute of Genetics and Medicine (TIGEM), Naples, Italy

2007 – Present
Head, Animal Behavioral Facility, Telethon Institute of Genetics and Medicine (TIGEM), Naples, Italy

PREVIOUS POSITIONS

2018- 2022
Group Leader (Senior scientist), Neuropsychopharmacology Laboratory, Institute of Cellular Biology and Biochemistry (IBBC) (previously called Institute of Cellular Biology and Neurobiology), Monterotondo (RM), Italy

2018
Visiting scientist, Biomedical Center, Medical Charles University of Pilsen, Czech Republic. EMBO fellowship

2010 – 2017

Staff scientist, Neuropsychopharmacology Laboratory,
Institute of Genetics and Biophysics (IGB-CNR) "Adriano
Buzzati-Traverso", Naples, Italy

2006 – 2007

Post Doctoral fellow, Psychobiology Laboratory, Dept. of
Genetic and Molecular Biology "C. Darwin", Mathematics
and Natural Sciences Department, University of Rome
"La Sapienza", Rome, Italy

2004 – 2006

Clinical Training, Skinner Institute, Rome, Italy

2005

Visiting scientist (one month), Neurobiologie de la
Cognition Lab, CNRS, Marseille, France

2003 – 2004

Associate Researcher (Rotary Club Research Grant),
Neuropsychopharmacology Laboratory, Catholic
University of Nijmegen, Nijmegen, Netherlands

ISTRUZIONE E FORMAZIONE

TITLES

2021 National Qualification (ASN): Full Professor in
Psychobiology (BANDO D.D. 2175/2018-Sector 11/E,
VALIDO DAL 31/05/2021 AL 31/05/2030, art. 16, comma
1, Legge 240/10).

2019 Eligibility - CNR Level I Research Director
Competition, Neuroscience competition area (315.46DR,
22 January 2021).

2018 Eligibility - CNR Level II First Researcher
Competition, Neuroscience competition area (Prot. No.
0059076, 12 September 2018).

2012 National Qualification (ASN): Associate Professor
in Psychobiology (2012 DD No.222/2012-Sector 11/E).

2010 Nomination 'Expert' - subjects related to the SSD M-
PSI / 02 of the Master Degree Course in Biological
Sciences of the University of Rome "La Sapienza", Rome,
Italy

2009 Eligibility - National Qualification CNR Level III
Researcher (Call 364.13 Tit. 0019751) 03/10/2009

2002 Order of Psychologists registration – Res. Order of
Psychologists of the Lazio Region 27/06/2002

2002 PhD in Psychobiology and Psychopharmacology
University of Rome "La Sapienza", Rome, Italy

1999 Master Degree in Psychology
University of Rome "La Sapienza", Rome, Italy

SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

2011 – Present n. 3 Senior

Researchers, n.10 post-

docs, n. 6 PhD students, n. 12 young fellows, n. 3 technician, n.30 master Degree, 10 bachelor Degree. Most of the scientists supervised by Dr. De Leonibus have continued to work either in academia or industry, both in Italy, Europe and USA.

SELECTION OF INVITED ORAL COMMUNICATIONS

- “Early development of MPS IIIA dopaminergic neurons: at the nexus of behavior changes and therapy” MPS Society 36th Annual Family Conference, August 4-6, 2022 Nashville, TN, (USA)
- “*The dopamine system's role in autistic behaviors in Sanfilippo*” ADVANCE 2022”Sanfilippo community conference”, 7-8 July, 2022
- “Altered metabolism of heparan sulfate leads to developmental dopaminergic abnormalities responsible for autistic-like behaviours in lysosomal storage disorders”, Symposium “Role of neuromodulators in synaptic plasticity and memory”, **Dopamine Meeting**, 21th May 2020, Montreal, Canada.
- “Memory load capacity: from pathophysiology to rescue strategies”. 22nd January 2020, **University of Heidelberg**, Heidelberg, Germany.
- “Memory load capacity: from pathophysiology to rescue strategies”. October 16, 2019, **Department of Neuroscience, SCRIPPS**, Jupiter (USA), FL 33458-5284.
- “Targeting Early disease’ mechanism in neurodegenerative disorders”. 19th July 2019, **Institute of Biochemistry and Cellular Biology (CNR)**, Naples, Italy.
- “Disrupted Dopamine Signalling in Neurodegenerative disorders holds clue to Autism”. 17th July 2019, **Invited-Seminars Sapienza**, Rome, Italy.
- “Early signs in Parkinson's disease: from motion to vision”. 18th March 2019, **Joint seminar Sapienza-Institute of molecular Pathology**, Rome, Italy.
- “Animal models of Alzheimer’ disease”. 29th June 2018, Biomedical Center, **Medical Charles University of Pilsen**, Czech Republic.
- “Challenging striatal neurons with learning protocols unmasks synaptic plasticity impairment in alpha-synuclein overexpressing neurons”, in the symposium “Aberrant pre- and post-synaptic mechanisms in Parkinson’s: pre-degeneration to late stage disease” **Federation of the European Neuroscience Society (FENS)**, 2018, July, Berlin, Germany (**Symposium organizer**).
- Iemolo A, Giordano NC, Bjorklund A, Calabresi P, Picconi B, **De Leonibus E**. “Early cognitive and neuronal dysfunction preceding neurodegeneration in a mouse model of alpha-synucleinopathy” Selected

for the nanosymposium in “**Cell Dysfunction and Degeneration in Parkinson's Disease**”, **American Society for Neuroscience, 2015**, October 17-21, Chicago, IL

“Do mice have a working memory span?” **Lemanic Neuroscience Doctoral Study**, Lausanne, Switzerland, 15th March 2013.

SELECTED FELLOWSHIPS/HONOURS/PRIZES

2018 EMBO short-term Fellowship as visiting Scientist at the Biomedical Center, Medical Charles University of Pilsen, Czech Republic.

2010 Young investigator grant award, Alzheimer' Association

2008 Annual prize for scientific achievements in psychobiology from the magazine “Mente e Cervello” (part of the Italian version of the American magazine “Scientific American”)

2003 Award as a one-year scholar Ambassador of Rotary International, Rotary International, Evanston (USA), at the Catholic University of Nijmegen, Nijmegen, the Netherlands (Dr. A.B. Ellenbroek and A.L. Cools).

SELECTED NATIONAL AND INTERNATIONAL COMMITTEE

Reviewer: Research project Reviewer (peer-reviewed) for the following national and international organization: Università degli Studi di Siena (Italia); Parkinson's Disease' Society (USA); American Alzheimer's Association (USA); Ministero dell'Istruzione, dell'Università e della Ricerca (MIUR) (Italia); Agence Nationale de la Recherche (ANR) (France)

2021-2022 Member of the evaluation panel Marie Skłodowska Curie Postdoctoral Fellowships (HORIZON-MSCA-2021-PF) Contract CT-EX2019D348588-102

2021 Reviewer for scientific proposals submitted to the European Research Council (ERC) Consolidator Grant 2021 Call.

2019-2020 Member of the evaluation panel of the Biomedical Center, Medical Charles University of Prague, Czech Republic.

2019-2020 Member of the evaluation panel ANR Molecular and Cellular Neuroscience committee, France.

2019 Member of the selection committee at the Advanced PhD School, SISSA, Trieste, Italy

2018–2019 Member of the evaluation panel ANR Molecular and Cellular Neuroscience committee, France.

2018 PhD in Neuroscience, External Examiner Defence, University of Naples Federico II, Naples, Italy.

2018 President of the Committee for the Selection

of post-doc, Institute of Cellular biology and Neurobiology (IBCN-CNR), Rome, Italy - Call identifier: Prot. AR04.2018.RM.

2001 - External Reviewer of international scientific journals: Nature Communications, Nature Aging, ANeuropsychopharmacology, Neuropharmacology, Alzheimer' & Dementia etc.

SYMPOSIUM/NATIONAL MEETING ORGANIZER

Founding member of the Dopamine Society, Montreal (Canada), 2022

Invited moderator for the session: "Update sull'edistonie: genetica, fisiopatologia e nuovi approcci terapeutici", 7th National Congress of the Italian Academy of Parkinson' disease and Movement Disorders, LIMPSE-DISMOV, Bologna, September 15-17, 2021.

Symposium organizer: "Aberrant pre- and post-synaptic mechanisms in Parkinson's: pre-degeneration to late stage disease" accepted for Federation of the European Neuroscience Society (FENS), 2018, July, Berlin, Germany

Member of the Local Organizing Committee: "Congresso Nazionale della Società Italiana di Neuroscienze (SINS)" - Perugia, September 26-29, 2019.

Peer-reviewed publications since independent group leader (selected among 58).

Rosito M, Sanchini C, Gosti G, Moreno M, De Panfilis S, Giubettini M, Debellis D, Catalano F, Peruzzi G, Marotta R, Indrieri A, **De Leonibus E**, De Stefano ME, Ragozzino D, Ruocco G, Di Angelantonio S, Bartolini F. Microglia reactivity entails microtubule remodeling from acentrosomal to centrosomal arrays. **Cell Rep.** 2023 Feb 13;42(2):112104. (IF=9.99)

Pellegrini F, Padovano V, Biscarini S, Santini T, Setti A, Galfrè SG, Silenzi V, Vitiello E, Mariani D, Nicoletti C, Torromino G, **De Leonibus E**, Martone J, Bozzoni I. A KO mouse model for the lncRNA Lhx1os produces motor neuron alterations and locomotor impairment. **iScience**, 2022 Dec 28;26(1):105891. (IF=5.74)

Torromino G, Loffredo V, Cavezza D, Esposito F, Crevenna AH, Giofrè M, De Risi M, Treves A, Griguoli M, **De Leonibus E**. Thalamo-hippocampal pathway regulates incidental memory load: insights from sex differences. **BioRxiv** <https://doi.org/10.1101/2021.08.07.453742>. **Nature Comm** Jul 20;13(1):4194. (IF=17.70)

Barral DC, Staiano L, Almeida CG, Cutler DF, Eden ER, Futter CE, Galione A, Marques ARA, Medina DL, Napolitano G, Settembre C, Vieira OV, Aerts JMFG, Atakpa-Adaji P, Bruno G, Capuozzo A, **De Leonibus E**, Di Malta C, Escrevente C, Esposito A, Grumati P, Hall MJ, Teodoro RO, Lopes SS, Luzio JP, Monfregola J, Montefusco S, Platt FM, Polishuck R, De Risi M, Sambri I, Soldati C, Seabra MC. Current methods to analyse lysosome morphology, positioning, motility and function.

Manuscript Under revision in **Traffic** (ID TRA-21-1120) (IF=6.21)

Capuozzo A, Montefusco S, Cace V, Martina S, Esposito A, Napolitano G, Nusco E, Polishchuck E, Pizzo MT, De Risi M, **De Leonibus E**, Sorrentino CN, Medina DL. Fluoxetine ameliorates Mucopolysaccharidosis type IIIA. **Mol Ther**. 2022 Feb 2:S1525-0016(22)00076-4. doi: 10.1016/j.ymthe.2022.01.037 (IF=11.40)

Forte N, Boccella S, Tunisi L, Fernandez-Rilo AC, Imperatore R, Iannotti FA, De Risi M, Iannotta M, Piscitelli F, Capasso R, Girolamo P, **De Leonibus E**, Maione S, Di Marzo V, Cristino L. Orexin-A and endocannabinoids are involved in obesity-associated alteration of hippocampal neurogenesis, plasticity and episodic memory. **Nature Comm**. 2021 Oct 21;12(1):6137. (IF=17.60)

Fiedler J, **De Leonibus E**, Treves A. Has the hippocampus really forgotten about space? 2021 Dec;71:164-169. **Current Opinion in Neurobiology** (IF=6.62).

De Risi M, Tufano M, Alvino FG, Ferraro MG, Torromino G, Gigante Y, Monfregola J, Marrocco E, Pulcrano S, Tunisi L, Lubrano C, Papy-Garcia D, Tuchman Y, Salleo A., Santoro f, Bellenchi GC, Cristino L, Ballabio A., Fraldi A. **D Leonibus E**. Altered metabolism of heparan sulfate leads to developmental dopaminergic abnormalities responsible for autistic-like behaviours in lysosomal storage disorders. 2021 Jun 9;12(1):3495 **Nature Comm** (IF=17.70). **Featured in the Editors' highlights webpage: From brain to behaviour (nature.com)**.

Tozzi A, Sciacaluga M, Loffredo V, Megaro A, Ledonne A, Cardinale A, Federici M, Bellingacci L, Paciotti S, Ferrari E, La Rocca A, Martini A, Mercuri N.B, Gardoni F, Picconi B, Ghiglieri V, **De Leonibus E**, Calabresi P. Dopamine –dependent synaptic and motor dysfunctions induced by alpha-synuclein in the nigrostriatal circuit. 2021 Dec 16;144(11):3477-3491 **Brain** (13.50).

Indrieri A, Pizzarelli R, Franco B, **De Leonibus E**. Synaptic and mitochondrial dysfunctions in Parkinsonian eyes, Topic: Seeing Beyond the Eye: The Brain Connection. Oct 19;14:567129, 2020, **Frontiers in Neuroscience** (IF=3.72).

Torromino G., Maggi A., **De Leonibus E**. Estrogens-dependent hippocampal wiring as a risk factor for ageing-related dementia in women. Feb;197:101895, 2021 **Progress in Neurobiology** (IF=10.16).

De Risi M, Torromino G, Tufano M, Moriceau S, Rivogorda M, Pignataro A, Ammassari_Teule M, Gardoni F, Middei S, Mele A, Oury F, **De Leonibus E**. Mechanisms through which autophagy regulates memory capacity in ageing". Sep;19(9):e13189, 2020, **Aging Cell** (IF=7.35).

Rinaldi A*, **De Leonibus E***, Cifra A, Torromino G, Minicocci E, De Sanctis E, Lopez-Pedrajas R, Oliverio A and Mele A. Flexible use of allocentric and egocentric spatial memories activates differential neural networks in mice. Jul 9;10(1):11338, 2020, **Scientific Reports** (IF=4.01). *Identical Contribution

Marrocco E, Indrieri A, Esposito F, Tarallo V, Carboncino A, Alvino FG, De Risi M, , Franco B, Auricchio A, **De**

Leonibus E. Alpha-synuclein in the retina leads to degeneration of dopamine amacrine cells impairing vision. 10(1):9619, 2020, **Scientific Reports (IF=4.01)**

Sorrentino NC, Cacace V*, De Risi M, Maffia V*, Strollo S, Tedesco N, Nusco E, Roagnoli N, Bacci ML, Huang Y, Liu N, Kalled SL, Choi VW, **De Leonibus E**, Fraldi A. Improved secretion and post-translational activation of sulfamidase enhances the bio-distribution and the therapeutic potential of sulfamidase for the treatment of MPS-IIIa. Oct 28;15:333-342, 2019, **Molecular Therapy - Methods & Clinical Development (IF=4.87)**.#Co-corresponding author

Monaco A, Maffia V, Sorrentino NC, Sambri I, Ezhova Y, Giuliano T, Cace V, Nusco E, De Risi M, **De Leonibus E**, Schrader T, Klanrner FG, Bitan G, Fraldi A. Inhibiting amyloid protein aggregation relieves lysosomal-autophagic dysfunction and protects against neurodegeneration in a severe lysosomal storage disease 28(4):1167-1176, 2020, **Embo Molecular Medicine (IF= 10.53)**.

Indrieri A, Carrella S, Romano A, Spaziano A, Marrocco E, Fernandez-Vizarra, Barbato S, Pizzo M, Ezhova Y, Golia FM, Ciampi L, Tammaro R, Henao-Mejia J, Williams A , Flavell RA, **De Leonibus E**, Zeviani M, Surace EM, Banfi S, Franco B. miR-181a/b Downregulation ameliorates Mitochondrial Diseases by coordinated activation of mitochondrial biogenesis and mitophagy. May;11(5), 2019, **Embo Molecular Medicine, (IF= 10.53)**.

Durante V, de Iure A, Loffredo V, Vaikath N, De Risi M, Paciotti S, Quiroga-Varela A, Chiasserini D, Mellone M, Mazzocchetti P, Calabrese V, Campanelli F, Mechelli A, Di Filippo M, Ghiglieri V, Picconi B, El-Agnaf OM, **De Leonibus E**, Gardoni F, Tozzi A, Calabresi P. Alpha-synuclein targets GluN2A NMDA receptor subunit causing striatal synaptic dysfunction and visuo-spatial memory alteration. May 1;142(5):1365-1385, 2019, **Brain (IF=11.34)**.

Olivito L*, De Risi M*, Russo F, Cecere A, **De Leonibus E**. Role of dopamine receptors in working memory capacity. Nov 2;359:197-205, 2018, **Behav Brain Res. (IF=3.17)**.

Iannotti FA, Pagano E, Moriello AS, Alvino FG, Sorrentino NC, D'Orsi L, Gazzero E, Capasso R, **De Leonibus E**, De Petrocellis L, Di Marzo V. Effects of non-euphoric plant cannabinoids on muscle quality and performance of dystrophic mdx mice. Aug 3, 2018, **Br J Pharmacol.** [Epub ahead of print] **(IF=6.81)**.

Miniaci MC, **De Leonibus E**. Missing the egocentric spatial frame: a blank on the map. Feb 9;7:168, 2018, **F1000Res** (Invited Review).

Picconi B, **De Leonibus E**, Calabresi P. Synaptic plasticity and levodopa induced dyskinesia: electrophysiological and structural abnormalities. Special issue on Parkinson disease, Feb 28. 2018, **Journal Neural Transmission** (Invited Review).

Giordano NC*, Iemolo A*, Mancini M, Cacace F, De Risi M, Latagliata EC, Ghiglieri V, Bellenchi GC, Puglisi-Allegra S, Calabresi P, Picconi B, **De Leonibus E**. Dopamine active transporter mediates learning-induced

shift in striatal plasticity: relevance for Parkinson's disease. Feb 1;141(2):505-520, 2018, **Brain (IF=11.814)**.

Gatto F, Rossi B, Tarallo T, Polishchuk E, Polishchuk R, Carrella A, Nusco E, Alvino FG, Iacobellis F, **De Leonibus E**, Auricchio A, Diez-Roux G, Ballabio A, Parenti G. AAV-mediated TFE3 gene delivery ameliorates muscle pathology and function in the murine model of Pompe Disease. 8;7(1):15089, 2017, **Scientific Reports**, Nov (IF=4.26).

Viggiano D, Speranza L, Crispino M, Belenchi GC, Di Porzio U, Iemolo A, **De Leonibus E**, Volpicelli F, Perrone-Capano C. Information content of dendritic spines after motor learning. Jan 15;336:256-260, 2017, **Behavior Brain Research**. (IF=3.26)

Sambri I, D'Alessio R, Ezhova Y, Sorrentino NC, Nusco E, De Risi M, Cataldi M, Annunziato L, **De Leonibus E**, Fraldi A. Re-establishing presynaptic function via cysteine string protein- α prevents neurodegeneration in lysosomal storage disorders. Jan;9(1):112-132, 2017, **EMBO Mol Med**. (IF=9.25)

Flore G, Di Ruberto G, Sannino S, Russo F, Illingworth E, Studer M, **De Leonibus E**. Gradient COUP-TFI Expression is Required for Proper Functional Organization of the Hippocampal Septo-Temporal Longitudinal Axis. Feb 1;27(2):1629-1643, 2017, **Cerebral Cortex** (IF=6.55).

Olivito L, Saccone P, Perri V, Bachman J, Fraganane P, Mele A, Haganir RL, **De Leonibus E**. Phosphorylation of the AMPA receptor GluA1 subunit regulates memory load capacity. Nov 8. 2014 [Epub ahead of print] **Brain Structure Function** (IF=5.61).

Ferla R, Claudiani P, Cotugno G, Saccone P, **De Leonibus E**, Auricchio A. Gene therapy overcomes the need for multiple infusions of enzyme replacement therapy in a mouse model of lysosomal storage disease. Jul;25(7):609-18, 2014, **Human Gene Therapy** (IF=5.46).

Saccone P, Cotugno G, Russo F, Mastrogiacomo R, Tessitore A, Auricchio A, **De Leonibus E**. Behavioural characterization of an animal model of Maroteaux-Lamy syndrome (or Mucopolysaccharidosis VI). Jan 10;4:3644, 2014, **Scientific Reports** (IF=5.57).

Sorrentino NC, D'Orsi L, Nusco E, Sambri I, Spanpanato C, Polishchuk E, Saccone P, **De Leonibus E**, Ballabio A, Fraldi A. A highly secreted sulfamidase engineered to cross the blood-brain barrier corrects the CNS pathology of mice with mucopolysaccharidoses type IIIA. 2013, May;5(5):675-90, **EMBO Molecular Medicine** (IF=8.24)

Managò F, Lopez S, Oliverio A, Amalric M, Mele A, **De Leonibus E**. Interaction between the mGlu receptors 5 antagonist, MPEP, and amphetamine on memory and motor functions in mice. Nov Epub ahead of print, 2012, **Psychopharmacology** (IF=4.06).

Murdocca M, Malgieri A, Luchetti A, Saieva L, Dobrowolny G, **De Leonibus E**, Filareto A, Quitadamo MC, Novelli G, Musarò A, Sangiuolo F. IPLEX administration improves motor neuron survival and ameliorates motor functions in a severe mouse model of spinal muscular atrophy. Sep 25;18:1076-85, 2012, **Mol Med**. (IF=4.46)

Sannino S*, Russo F*, Torromino G, Pendolino V, Calabresi P, **De Leonibus E**. Role of the hippocampus in object memory load. 19: 211-18, 2012, **Learning & Memory (IF=4.05)**.

Rotundo IL, Faraso S, **De Leonibus E**, Nigro G, Vitiello C, Lancioni A, Di Napoli D., Castaldo S, Russo V, Russo F, Piluso S, Auricchio A, Nigro V. Worsening of cardiomyopathy using Deflazacort in an animal model rescued by gene therapy. 6: e24729, 2011, **Plos One. (IF=4.09)**

De Leonibus E*, Costantini VJA*, Massaro A, Vanni V, Mandolesi G, Luvisetto S, Pavone F, Oliverio A, Mele A. Cognitive and neural determinants of response strategy in the dual-solution plusmaze task. 18(4):241-4, 2011, **Learning & Memory (IF=4.21)**.

Spampanato C*, **De Leonibus E***, Dama P, Gargiulo A, Fraldi A, Sorrentino CN, Russo F, Nusco E, Auricchio A, Surace EM, Ballabio A. Efficacy of a combined intracerebral and systemic gene delivery approach for the treatment of a severe lysosomal storage disorder. 19(5):860-9, 2011, **Human Molecular Genetics (IF=7.6)**.

MADRELINGUA

ITALIANO

ALTRE LINGUE

- Capacità di lettura
- Capacità di scrittura
- Capacità di espressione orale

INGLESE

eccellente
eccellente
eccellente

PATENTE O PATENTI

Patente B

Roma, 09/06/23

Firma
Elvira De Leonibus