

EMILIO CLEMENTI- BIOGRAPHICAL SKETCH

| SNAPSHOT | |
|--|---|
| <ul style="list-style-type: none"> • Full Professor of Pharmacology, University of Milano, School of Medicine, Milan, Italy • Director, Clinical Pharmacology Unit, L. Sacco Hospital (NHS), Milan, Italy • Coordinator, Pharmacogenetics section, Italian Society of Pharmacology • Over 20 years of experience of research in basic, translational and clinical pharmacology • Editor in Chief, Pharmacological Research, Elsevier. | |
| PROFESSIONAL EXPERIENCE | |
| 2008-present | <p>L. Sacco Hospital (National Health System) (Milan, Italy) Director Clinical Pharmacology Unit (since 2021 comprising the International Centre for Pesticide Safety and since 2023 the Clinical Research Service of the Hospital)</p> <ul style="list-style-type: none"> • Strategic planning and coordination of clinical activity in therapeutic drug monitoring for the National Health System including pharmacovigilance monitoring projects sponsored by the Italian medicines Agency • Development of a clinical centre for pharmacogenetics and therapy optimisation • Strategic planning for a centre devoted to ecotoxicology/ environmental science, food safety, environmental chemistry, and management and processing of health data |
| 2005-present | <p>University of Milano (Milan, Italy) Full Professor of Pharmacology</p> <ul style="list-style-type: none"> • Teaching of Pharmacology (general and clinical), the School of Medicine and Surgery • Teaching in Continuing Medical Education courses of pharmacology • Research in pharmacovigilance, therapeutic drug monitoring, pharmacogenetics. • Research in translational pharmacology on metabolism with a focus on experimental therapies for Muscular Dystrophies |
| 2003-present | <p>E. Medea Clinical Research Institute (Lecco, Italy) Coordination of the pharmacology sector</p> <ul style="list-style-type: none"> • Research on drug therapies in paediatric neuro-rhehabilitation |
| 1999-2005 | <p>University of Calabria (Cosenza, Italy) Associate Professor of Pharmacology</p> <ul style="list-style-type: none"> • Teaching of Pharmacology (general and clinical), the School of Pharmacy • Teaching in Continuing Medical Education courses of pharmacology • Research in basic pharmacology in the field of signal transduction (sphingolipid metabolism and Nitric Oxide-dependent pathways). |
| 1999-2005 | <p>San Raffaele Clinical Research Institute (Milan, Italy) Head of the Cellular Pharmacology Unit</p> <ul style="list-style-type: none"> • Research in basic/translational pharmacology in molecular mechanisms of muscular degeneration • Supervisor, PhD Programme, Open University (San Raffaele site) |
| 1997-1999 | <p>University College London (London, UK) Marie Curie Research Fellow Research on nitric oxide role in cell metabolism and bioenergetics</p> |
| 1992-1996 | <p>University Magna Graecia (Catanzaro, Italy) Reader of Pharmacology</p> <ul style="list-style-type: none"> • Research in basic pharmacology in the field of signal transduction (sphingolipid metabolism and calcium-dependent pathways) |
| MEMBERSHIPS | |
| 2022-present | Member , the National Ethics Paediatric Committee |
| 2022-present | Councillor-- the Italian Society of Pharmacology |
| 2018-present | Executive Committee member- International Union of Basic & Clinical Pharmacology IUPHAR |

| | |
|---|---|
| 2017-2019 2015-2023 | Councillor - The European Association of Clinical Pharmacology and Therapeutics Member , the Ethics Committee of the “Fondazione Ospedale Maggiore” Scientific Institute, Milan |
| 2015-2019 2013-present 2009-2013 | National delegate - The European Association of Clinical Pharmacology and Therapeutics Councillor -- clinical section, the Italian Society of Pharmacology Councillor -- the Italian Society of Pharmacology |
| EDUCATION/TRAINING | |
| 1972-1983 1977-1982 1982-1988 1984-1988 1990-1993 | Conservatory of Music G.Verdi - M. Mus, piano with full marks Classic Liceum G. Carducci - Bachelor in Humanities with full marks University of Milan - M.D. degree with honours Conservatory of Music G.Verdi - specialisation in harpsichord playing and baroque music University of Brescia - PhD in Experimental Pharmacotherapy |
| FUNDING | |
| | Over the years he has attracted more than 5 million euros for his research group from Italian charities (Telethon, The Italian Association for Cancer Research), the Ministry of research, the Ministry of health, the Italian medicines Agency, and the EU Funding for research in 2021-2022 Ministry of Research PRIN Grant € 380000 and NextGenerationEU € 350000 Ministry of Health Piano Operativo Salute (Operational Health Plan) € 1000000 |

Scientific Resumé

Author of more than 400 articles in basic translational and clinical pharmacology with more than 20000 citations; H index: 60 (all from Scopus)

<https://www.scopus.com/authid/detail.uri?authorId=7101959716>

<https://orcid.org/0000-0001-7333-8270>

I started by working on calcium and sphingolipid metabolism signalling, helping to identify the type 3 ryanodine receptor, to then introduce nitric oxide as regulator of these pathways; this led me to investigate the role of nitric oxide in mitochondrial bioenergetics, a work done at UCL, and then contribute to identify nitric oxide role in mitochondrial biogenesis and the control of cell metabolism. The relevance of this in therapeutic perspective led me to investigate the role of nitric oxide in the pathophysiology of skeletal muscle and as a therapeutic in Duchenne Muscular Dystrophy with studies moving from basic to translational research and finally to a phase I and a phase I/II clinical study. The advantage of being director since 2005 of a Clinical Pharmacology Unit allowed me to deepen my study on metabolism by addressing metabolic adverse drug reactions, in particular the ones associated with the use of antipsychotic drugs in paediatric patients, through approaches that combined basic research with pharmacokinetic, pharmacogenetic and pharmacoepidemiological analyses.

Ten relevant publications

1. Expression of a ryanodine receptor-Ca²⁺ channel that is regulated by TGF-beta G Giannini, E Clementi, R Ceci, G Marziali, V Sorrentino *Science* - 1992 Jul 3; 257(5066):91-4. doi: 10.1126/science.1320290.
2. Persistent inhibition of cell respiration by nitric oxide: crucial role of S-nitrosylation of mitochondrial complex I and protective action of glutathione E Clementi, G C Brown, M Feelisch, S Moncada *Proc Natl Acad Sci U S A* - 1998 Jun 23; 95(13):7631-6. doi: 10.1073/pnas.95.13.7631.
3. Mitochondrial biogenesis in mammals: the role of endogenous nitric oxide E Nisoli, E Clementi, C Paolucci, V Cozzi, C Tonello, C Sciorati, R Bracale, A Valerio, M Francolini, S Moncada, MO Carruba *Science* - 2003 Feb 7; 299(5608):896-9. doi: 10.1126/science.1079368.
4. Mitochondrial biogenesis by NO yields functionally active mitochondria in mammals E Nisoli, S Falcone, C Tonello, V Cozzi, L Palomba, M Fiorani, A Pisconti, S Brunelli, A Cardile, M Francolini, O Cantoni, MO Carruba, S Moncada, E Clementi *Proc Natl Acad Sci U S A* - 2004 Nov 23; 101(47):16507-12. doi: 10.1073/pnas.0405432101.
5. Calorie restriction promotes mitochondrial biogenesis by inducing the expression of eNOSE Nisoli, C Tonello, A Cardile, V Cozzi, R Bracale, L Tedesco, S Falcone, A Valerio, O Cantoni, E Clementi, S Moncada, MO Carruba *Science* - 2005 Oct 14; 310(5746):314-7. doi: 10.1126/science.1117728.
6. Nitric oxide release combined with nonsteroidal antiinflammatory activity prevents muscular dystrophy pathology and enhances stem cell therapy S Brunelli, C Sciorati, G D'Antona, A Innocenzi, D Covarello, BG Galvez, C Perrotta, A Monopoli, F Sanvito, R Bottinelli, E Ongini, G Cossu, E Clementi *Proc Natl Acad Sci U S A* - 2007 Jan 2; 104(1):264-9. doi: 10.1073/pnas.0608277104.
7. Nitric oxide inhibition of Drp1-mediated mitochondrial fission is critical for myogenic differentiation C De Palma, S Falcone, S Pisoni, S Cipolat, C Panzeri, S Pambianco, A Pisconti, R Allevi, M T Bassi, G Cossu, T Pozzan, S Moncada, L Scorrano, S Brunelli, E Clementi *Cell Death Differ* - 2010 Nov; 17(11):1684-96. doi: 10.1038/cdd.2010.48.
8. Nitric oxide donor and non steroidal anti inflammatory drugs as a therapy for muscular dystrophies: evidence from a safety study with pilot efficacy measures in adult dystrophic patients MG D'Angelo, S Gandossini, F Martinelli Boneschi, C Sciorati, S Bonato, E Brighina, G Comi, AC Turconi, F Magri, G Stefanoni, S Brunelli, N Bresolin, D Cattaneo, E Clementi *Pharmacol Res* - 2012 Apr; 65(4):472-9. doi: 10.1016/j.phrs.2012.01.006.
9. Therapeutic drug monitoring of second-generation antipsychotics in pediatric patients: an observational study in real-life settings M Pozzi, D Cattaneo, S Baldelli, S Fucile, A Capuano, C Bravaccio, L Sportiello, S Bertella, F Auricchio, R Bernardini, C Ferrajolo, G Guastella, E Mani, Carla Carnovale, Simone Pisano, Concetta Rafaniello, Maria Pia Riccio, Renata Rizzo, Maria Grazia Scuderi, Serena Sperandeo, Laura Villa, Antonio Pascotto, Massimo Molteni, Francesco Rossi, Sonia Radice, Emilio Clementi *Eur J Clin Pharmacol* - 2016 Mar; 72(3):285-93. doi: 10.1007/s00228-015-1982-0.
10. Autophagy controls neonatal myogenesis by regulating the GH-IGF1 system through a NFE2L2- and DDIT3-mediated mechanism S Zecchini, M Giovarelli, C Perrotta, F Morisi, T Touvier, I Di Renzo, C Moscheni, MT Bassi, D Cervia, M Sandri, E Clementi, C De Palma *Autophagy* - 2019 Jan; 15(1):58-77. doi: 10.1080/15548627.2018.1507439.