

Elisabetta Cerbai – Curriculum Vitae

INFORMAZIONI PERSONALI

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• STUDI

- 1980-1984 *Laurea in Scienze Biologiche*, Università di Firenze (110/110 e lode)
1986-1990 *Dottorato di Ricerca in Farmacologia e Tossicologia*, Università di Firenze, con una tesi dal titolo “Cellular electrophysiological basis for oxygen radical-induced arrhythmias. A patch-clamp study in guinea pig ventricular myocytes”, pubblicata su *Circulation* 1991, 84:1773-82.
1986 -1987 *Visiting scientist* Institut für Physiologie Universität Köln (Germania)

• POSIZIONE PROFESSIONALE

- 2005 – *Professore ordinario di Farmacologia (SSD BIO/14)*
Dipartimento di Neuroscienze, Psicologia, Area del Farmaco e Salute del Bambino (NeuroFarBa) (già Dipartimento di Farmacologia fino al 2013),
Scuola di Scienze della Salute Umana (già Facoltà di Medicina e Chirurgia)

• POSIZIONI PRECEDENTI

- 2000-2005 *Professore Associato di Farmacologia, e in precedenza*
1996-2000 *Ricercatore Universitario*, Facoltà di Medicina e Chirurgia Dipartimento di Farmacologia Preclinica e Clinica, Università degli Studi di Firenze
1990-1996 *Ricercatore Universitario* Facoltà di Farmacia, Istituto di farmacologia, Università di Ferrara

• ATTIVITA' ISTITUZIONALI, ORGANIZZATIVE E GESTIONALI

- 2009-2015 *Prorettore alla Ricerca Scientifica*, Università degli Studi di Firenze
2010-2014 *Membro del Consiglio di Amministrazione della Fondazione Ricerca e Innovazione*, Firenze
2013-2016 *Presidente del Nucleo di Valutazione di Ateneo*, *Sapienza* Università di Roma,
2015-2018 *Membro del Consiglio Superiore di Sanità*
2016-2020 *Rappresentante per l'Area Biomedica nel Senato Accademico*, Università degli Studi di Firenze
2019 - *Direttore del LENS (European Laboratory for Non-linear Spectroscopy)*, Laboratorio di ricerca – Sesto Fiorentino, Firenze

• COMMISSIONI DI INDIRIZZO E VALUTAZIONE

- 2017- *Commissione per l'Etica e Integrità nella Ricerca*, Consiglio Nazionale della Ricerca (CNR)
2017- *Flanders Research Foundation (FWO)*, Expert panels for PhD, Post-doc and Strategic projects
2013- *Heres-France (former ANR) Commissione per accreditamento INSERM*

- 2019- Scientific Advisory Council di Eurac Research (BZ, Italy)
2011-2019 Comitato di Indirizzo del Distretto Toscano Scienze della Vita
2019- Rappresentate per UNIFI nel Presidio HealthScience della Regione Toscana

• **INSEGNAMENTI**

Corsi di L e LM Farmacologia, Farmacologia clinica, Tecniche di Rigenerazione di tessuti e organi nella Scuola di Scienze della Salute Umana (ex Facoltà di Medicina e Chirurgia), per i Corsi di Studio in Medicina e Chirurgia, Infermieristica, Biotecnologie Mediche

Scuole di Specializzazione Docente di Farmacologia, Farmacologia Clinica e Farmacologia Pediatrica nelle Scuole di Specializzazione di Area Sanitaria (Farmacologia e tossicologia clinica, Malattie dell'Apparato Cardiovascolare, Medicina dello Sport e dell'Esercizio Fisico, Genetica medica) dell'Università di Firenze.

Dottorato - Membro del Collegio dei Docenti del Dottorato Regionale "Pegaso" in Medicina Molecolare (sede amministrativa: Università di Siena)

• **COORDINAMENTO DI PROGETTI NAZIONALI e INTERNAZIONALI**

Principal Investigator or co-PI in progetti finanziati dal MiUR dal 1997 to 2008, sui meccanismi aritmogeni nell'insufficienza cardiaca (1997, 1999, 2001); fibrillazione atriale (2000, 2002); cardiomiopatia diabetica (2004) e sul differenziamento cardiomiocitario di cellule staminali (2005-2007).

Coordinatore del Progetto MiUR PRIN 2017 "Rhythm-Insight"

Co-PI in progetti finanziati da Telethon su Cardiomiopatia Ipertrofica dal 1994 al 2007.

Coordinatore del Progetto FP6 "[Normacor](#): Normal and abnormal cardiac excitation: generation, propagation, and coupling to contraction" (2006-2009)

Management Progetto FP7 "[Big-Heart](#): Bench-to-beside Integrated approach to familial hypertrophic cardiomyopathy: to the HEART of the disease" (2010-2015)

Coordinatore del Progetto FAS-MIUR "[Torsade](#): Tuscany Registry of Sudden Cardiac Death" (2016-2018)

Co-PI del Progetto RePAIR (EU project 952166, 2020-2024)

• **SOCIETA' SCIENTIFICHE**

1986 – Membro del Working Group on Cardiac Cellular Electrophysiology (European Society of Cardiology); Nucleus member (2004-2008), Vice Chair (2008-2010), Chairperson (2010-2012); Past-Chair ed ex-Officio (2012-2016)

1988 – Membro della Società Italiana di Farmacologia (Eletta nel Consiglio direttivo nel 2007-2011; membro della Giunta del Collegio dei Professori di Farmacologia (2015-2019)

2008 – Fellow di European Society of Cardiology

2012 – 2018 Membro di European Heart and Rhythm Association (Membro della Education committee 2008-2012)

2015 – Membro della Società Italiana di cardiologia e Consigliere per la Sezione Tosco-Umbra nel 2016-2018.

2018- Membro del Working Group on Cardiovascular Pharmacotherapy (European Society of Cardiology); Nucleus member (2020-2022)

PUBBLICAZIONI SU RIVISTE INTERNAZIONALI PEER-REVIEWED (2011-2020)

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1. Emdin M, Aimo A, Castiglione V, Vergaro G, Georgiopoulos G, Saccaro LF, Lombardi CM, Passino C, Cerbai E, Metra M, Senni M. Targeting Cyclic Guanosine Monophosphate to Treat Heart Failure: JACC Review Topic of the Week. *J Am Coll Cardiol*. 2020 Oct 13;76(15):1795-1807. doi: 10.1016/j.jacc.2020.08.031.
2. Santini L, Palandri C, Nediani C, Cerbai E, Coppini R. Modelling genetic diseases for drug development: Hypertrophic cardiomyopathy. *Pharmacol Res*. 2020 Aug 29;160:105176. doi: 10.1016/j.phrs.2020.105176.
3. Coppini R, Santini L, Olivotto I, Ackerman MJ, Cerbai E. Abnormalities in Sodium Current and Calcium Homeostasis as Drivers of Arrhythmogenesis in Hypertrophic Cardiomyopathy. *Cardiovasc Res*. 2020 May 4. pii: cvaa124. doi: 10.1093/cvr/cvaa124. PMID: 32365196.
4. Kharouf Q, Phillips AM, Bleakley LE, Morrisroe E, Oyrer J, Jia L, Ludwig A, Jin L, Nicolazzo JA, Cerbai E, Romanelli MN, Petrou S, Reid CA. The hyperpolarization-activated cyclic nucleotide-gated 4 channel as a potential anti-seizure drug target. *Br J Pharmacol*. 2020 May 4. doi: 10.1111/bph.15088. PMID: 32364262.
5. Scardigli M, Cannazzaro S, Coppini R, Crocini C, Yan P, Loew LM, Sartiani L, Cerbai E, Pavone FS, Sacconi L, Ferrantini C. Arrhythmia susceptibility in a rat model of acute atrial dilation. *Prog Biophys Mol Biol*. 2020 Feb 13. pii: S0079-6107(19)30075-6. doi: 10.1016/j.pbiomolbio.2019.08.012. PMID: 32063273.
6. Aimo A, Cerbai E, Bartolucci G, Adamo L, Barison A, Lo Surdo G, Biagini S, Passino C, Emdin M. Pirfenidone is a cardioprotective drug: Mechanisms of action and preclinical evidence. *Pharmacol Res*. 2020 May;155:104694. doi: 10.1016/j.phrs.2020.104694. Epub 2020 Feb 19. PMID: 32061664.
7. Coppini R, Ferrantini C, Pioner JM, Santini L, Wang ZJ, Palandri C, Scardigli M, Vitale G, Sacconi L, Stefano P, Flink L, Riedy K, Pavone FS, Cerbai E, Poggesi C, Mugelli A, Bueno-Orovio A, Olivotto I, Sherrid MV. Electrophysiological and Contractile Effects of Disopyramide in Patients With Obstructive Hypertrophic Cardiomyopathy: A Translational Study. *JACC Basic Transl Sci*. 2019 Oct 9;4(7):795-813. doi: 10.1016/j.jacbts.2019.06.004. eCollection 2019 Nov. PMID: 31998849; PMCID: PMC6978554.
8. Coppini R, Santini L, Palandri C, Sartiani L, Cerbai E, Raimondi L. Pharmacological Inhibition of Serine Proteases to Reduce Cardiac Inflammation and Fibrosis in Atrial Fibrillation. *Front Pharmacol*. 2019 Dec 20;10:1420. doi: 10.3389/fphar.2019.01420. eCollection 2019. Review. PMID: 31956307; PMCID: PMC6951407.
9. Laurino A, Spinelli V, Gencarelli M, Balducci V, Dini L, Diolaiuti L, Ghionzoli M, Messineo A, Mugelli A, Cerbai E, Raimondi L, Sartiani L. Angiotensin-II Drives Human Satellite Cells Toward Hypertrophy and Myofibroblast Trans-Differentiation by Two Independent Pathways. *Int J Mol Sci*. 2019 Oct 3;20(19). pii: E4912. doi: 10.3390/ijms20194912. PMID: 31623362; PMCID: PMC6801484.
10. Pioner JM, Santini L, Palandri C, Martella D, Lupi F, Langione M, Querceto S, Grandinetti B, Balducci V, Benzoni P, Landi S, Barbuti A, Ferrarese Lupi F, Boarino L, Sartiani L, Tesi C, Mack DL, Regnier M, Cerbai E, Parmeggiani C, Poggesi C, Ferrantini C, Coppini R. Optical Investigation of Action Potential and Calcium Handling Maturation of hiPSC-Cardiomyocytes on Biomimetic Substrates. *Int J Mol Sci*. 2019 Aug 3;20(15). pii: E3799. doi: 10.3390/ijms20153799. PMID: 31382622; PMCID: PMC6695920.
11. Romanelli MN, Del Lungo M, Guandalini L, Zobeiri M, Gyökeres A, Árpádfy-Lovas T, Koncz I, Sartiani L, Bartolucci G, Dei S, Manetti D, Teodori E, Budde T, Cerbai E. EC18 as a Tool To Understand the Role of HCN4 Channels in Mediating Hyperpolarization-Activated Current in Tissues. *ACS Med Chem Lett*. 2019 Feb 6;10(4):584-589. doi: 10.1021/acsmchemlett.8b00587. eCollection 2019 Apr 11. PMID: 30996800; PMCID: PMC6466822.
12. Crocini C, Ferrantini C, Coppini R, Pavone FS, Poggesi C, Cerbai E, Sacconi L. Letter to the Editor. *J Physiol*. 2019 Jun;597(11):2965-2966. doi: 10.1113/JP278018. Epub 2019 Apr 14. PMID: 30924149.
13. Ferrantini C, Pioner JM, Martella D, Coppini R, Piroddi N, Paoli P, Calamai M, Pavone FS, Wiersma DS, Tesi C, Cerbai E, Poggesi C, Sacconi L, Parmeggiani C. Development of Light-Responsive Liquid Crystalline Elastomers to Assist Cardiac Contraction. *Circ Res*. 2019 Apr 12;124(8):e44-e54. doi: 10.1161/CIRCRESAHA.118.313889. PMID: 30732554.
14. Johnson DM, Mugelli A, Cerbai E. Editorial: The Role of Calcium Handling in Heart Failure and Heart Failure Associated Arrhythmias. *Front Physiol*. 2019 Jan 22;10:1. doi: 10.3389/fphys.2019.00001. eCollection 2019. PMID: 30723415; PMCID: PMC6349775.
15. Dini L, Del Lungo M, Resta F, Melchiorre M, Spinelli V, Di Cesare Mannelli L, Ghelardini C, Laurino A, Sartiani L, Coppini R, Mannaioni G, Cerbai E, Romanelli MN. Selective Blockade of HCN1/HCN2 Channels as a Potential Pharmacological Strategy Against Pain. *Front Pharmacol*. 2018 Nov 8;9:1252. doi: 10.3389/fphar.2018.01252. eCollection 2018. PMID: 30467478; PMCID: PMC6237106.

16. Coppini R, Ferrantini C, Mugelli A, Poggesi C, Cerbai E. Altered Ca(2+) and Na(+) Homeostasis in Human Hypertrophic Cardiomyopathy: Implications for Arrhythmogenesis. *Front Physiol.* 2018 Oct 16;9:1391. doi: 10.3389/fphys.2018.01391. eCollection 2018. PMID: 30420810; PMCID: PMC6215954.
17. Scardigli M, Müllenbroich C, Margoni E, Cannazzaro S, Crocini C, Ferrantini C, Coppini R, Yan P, Loew LM, Campione M, Bocchi L, Giulietti D, Cerbai E, Poggesi C, Bub G, Pavone FS, Sacconi L. Real-time optical manipulation of cardiac conduction in intact hearts. *J Physiol.* 2018 Sep;596(17):3841-3858. doi: 10.1113/JP276283. Epub 2018 Aug 7. PMID: 29989169; PMCID: PMC6117584.
18. Bua S, Berrino E, Del Prete S, Murthy VS, Vijayakumar V, Tamboli Y, Capasso C, Cerbai E, Mugelli A, Carta F, Supuran CT. Synthesis of novel benzenesulfamide derivatives with inhibitory activity against human cytosolic carbonic anhydrase I and II and *Vibrio cholerae* α - and β -class enzymes. *J Enzyme Inhib Med Chem.* 2018 Dec;33(1):1125-1136. doi: 10.1080/14756366.2018.1467901. PMID: 29987956; PMCID: PMC6041819.
19. Spinelli V, Sartiani L, Mugelli A, Romanelli MN, Cerbai E. Hyperpolarization-activated cyclic-nucleotide-gated channels: pathophysiological, developmental, and pharmacological insights into their function in cellular excitability. *Can J Physiol Pharmacol.* 2018 Oct;96(10):977-984. doi: 10.1139/cjpp-2018-0115. Epub 2018 Jul 3. Review. PMID: 29969572.
20. Cerbai E, Mugelli A. Lercanidipine and T-type calcium current. *Eur Rev Med Pharmacol Sci.* 2018 Jun;22(12):4025-4031. doi: 10.26355/eurrev_201806_15289. PMID: 29949180.
21. Mazarotto F, Girolami F, Boschi B, Barlocco F, Tomberli A, Baldini K, Coppini R, Tanini I, Bardi S, Contini E, Cecchi F, Pelo E, Cook SA, Cerbai E, Poggesi C, Torricelli F, Walsh R, Olivotto I. Defining the diagnostic effectiveness of genes for inclusion in panels: the experience of two decades of genetic testing for hypertrophic cardiomyopathy at a single center. *Genet Med.* 2019 Feb;21(2):284-292. doi: 10.1038/s41436-018-0046-0. Epub 2018 Jun 6. PMID: 29875424; PMCID: PMC6752309.
22. Ferrantini C, Pioner JM, Mazzoni L, Gentile F, Tosi B, Rossi A, Belardinelli L, Tesi C, Palandri C, Matucci R, Cerbai E, Olivotto I, Poggesi C, Mugelli A, Coppini R. Late sodium current inhibitors to treat exercise-induced obstruction in hypertrophic cardiomyopathy: an in vitro study in human myocardium. *Br J Pharmacol.* 2018 Jul;175(13):2635-2652. doi: 10.1111/bph.14223. Epub 2018 May 3. PMID: 29579779; PMCID: PMC6003658.
23. Aimo A, Vergaro G, Barison A, Maffei S, Borrelli C, Morrone D, Cameli M, Palazzuoli A, Ambrosio G, Coiro S, Savino K, Cerbai E, Marcucci R, Pedrinelli R, Padeletti L, Passino C, Emdin M. Sex-related differences in chronic heart failure. *Int J Cardiol.* 2018 Mar 15;255:145-151. doi: 10.1016/j.ijcard.2017.10.068. PMID: 29425552.
24. Resta F, Micheli L, Laurino A, Spinelli V, Mello T, Sartiani L, Di Cesare Mannelli L, Cerbai E, Ghelardini C, Romanelli MN, Mannaioni G, Masi A. Selective HCN1 block as a strategy to control oxaliplatin-induced neuropathy. *Neuropharmacology.* 2018 Mar 15;131:403-413. doi: 10.1016/j.neuropharm.2018.01.014. Epub 2018 Jan 12. PMID: 29339292.
25. Scardigli M, Crocini C, Ferrantini C, Gabbriellini T, Silvestri L, Coppini R, Tesi C, Rog-Zielinska EA, Kohl P, Cerbai E, Poggesi C, Pavone FS, Sacconi L. Reply to Entcheva: The impact of T-tubules on action potential propagation in cardiac tissue. *Proc Natl Acad Sci U S A.* 2018 Jan 23;115(4):E562-E563. doi: 10.1073/pnas.1720253115. Epub 2018 Jan 5. PMID: 29305385; PMCID: PMC5789959.
26. Beltrami M, Palazzuoli A, Padeletti L, Cerbai E, Coiro S, Emdin M, Marcucci R, Morrone D, Cameli M, Savino K, Pedrinelli R, Ambrosio G; Società Italiana di Cardiologia, Sezione Regionale Tosco-Umbra. The importance of integrated left atrial evaluation: From hypertension to heart failure with preserved ejection fraction. *Int J Clin Pract.* 2018 Feb;72(2). doi: 10.1111/ijcp.13050. Epub 2017 Dec 28. Review. PMID: 29283475.
27. Cameli M, Mandoli GE, Ambrosio G, Cerbai E, Coiro S, Emdin M, Marcucci R, Morrone D, Palazzuoli A, Savino K, Padeletti L, Mondillo S, Pedrinelli R; Società Italiana di Cardiologia, Sezione Regionale Tosco-Umbra. Arterial hypertension and atrial fibrillation: standard and advanced echocardiography from diagnosis to prognostication. *J Cardiovasc Med (Hagerstown).* 2018 Feb;19(2):51-61. doi: 10.2459/JCM.0000000000000607. Review. PMID: 29251696.
28. Zaglia T, Ceriotti P, Campo A, Borile G, Armani A, Carullo P, Prando V, Coppini R, Vida V, Stølen TO, Ulrik W, Cerbai E, Stellin G, Faggian G, De Stefani D, Sandri M, Rizzuto R, Di Lisa F, Pozzan T, Catalucci D, Mongillo M. Content of mitochondrial calcium uniporter (MCU) in cardiomyocytes is regulated by microRNA-1 in physiologic and pathologic hypertrophy. *Proc Natl Acad Sci U S A.* 2017 Oct 24;114(43):E9006-E9015. doi: 10.1073/pnas.1708772114. Epub 2017 Oct 9. PMID: 29073097; PMCID: PMC5664523.
29. Martella D, Paoli P, Pioner JM, Sacconi L, Coppini R, Santini L, Lulli M, Cerbai E, Wiersma DS, Poggesi C, Ferrantini C, Parmeggiani C. Liquid Crystalline Networks toward Regenerative Medicine and Tissue Repair. *Small.* 2017 Dec;13(46). doi: 10.1002/sml.201702677. Epub 2017 Oct 17. PMID: 29045016.
30. Pedrinelli R, Dell'omo G, Cameli M, Cerbai E, Coiro S, Emdin M, Liga R, Marcucci R, Morrone D, Palazzuoli A, Savino K, Padeletti L, Ambrosio G; Società Italiana di Cardiologia, Sezione Regionale Tosco-Umbra. Resistant hypertension: an overview. *Minerva Cardioangiol.* 2018 Jun;66(3):337-348. doi: 10.23736/S0026-4725.17.04495-4. Epub 2017 Sep 5. Review. PMID: 28880055.

30. Sartiani L, Mannaioni G, Masi A, Novella Romanelli M, Cerbai E. The Hyperpolarization-Activated Cyclic Nucleotide-Gated Channels: from Biophysics to Pharmacology of a Unique Family of Ion Channels. *Pharmacol Rev.* 2017 Oct;69(4):354-395. doi: 10.1124/pr.117.014035. Review. PMID: 28878030.
31. Liga R, Gimelli A, Marzullo P, Ambrosio G, Cameli M, Cerbai E, Coiro S, Emdin M, Marcucci R, Morrone D, Palazzuoli A, Petronio AS, Savino K, Padeletti L, Pedrinelli R; Società Italiana di Cardiologia, Sezione Regionale Tosco-Umbra. Myocardial (123)I-metaiodobenzylguanidine imaging in hypertension and left ventricular hypertrophy. *J Nucl Cardiol.* 2018 Apr;25(2):461-470. doi: 10.1007/s12350-017-1029-2. Epub 2017 Aug 10. Review. PMID: 28798990.
32. Ferrantini C, Coppini R, Pioner JM, Gentile F, Tosi B, Mazzoni L, Scellini B, Piroddi N, Laurino A, Santini L, Spinelli V, Sacconi L, De Tombe P, Moore R, Tardiff J, Mugelli A, Olivotto I, Cerbai E, Tesi C, Poggesi C. Pathogenesis of Hypertrophic Cardiomyopathy is Mutation Rather Than Disease Specific: A Comparison of the Cardiac Troponin T E163R and R92Q Mouse Models. *J Am Heart Assoc.* 2017 Jul 22;6(7). pii: e005407. doi: 10.1161/JAHA.116.005407. PMID: 28735292; PMCID: PMC5586279.
33. Berrino E, Bua S, Mori M, Botta M, Murthy VS, Vijayakumar V, Tamboli Y, Bartolucci G, Mugelli A, Cerbai E, Supuran CT, Carta F. Novel Sulfamide-Containing Compounds as Selective Carbonic Anhydrase I Inhibitors. *Molecules.* 2017 Jun 24;22(7). pii: E1049. doi: 10.3390/molecules22071049. PMID: 28672822; PMCID: PMC6151984.
34. Boriani G, Lorenzetti S, Cerbai E, Oreto G, Bronzetti G, Malavasi VL, Biffi A, Padeletti L, Botto G, Diemberger I. The effects of gender on electrical therapies for the heart: physiology, epidemiology, and access to therapies. *Europace.* 2017 Sep 1;19(9):1418-1426. doi: 10.1093/europace/eux068. Review. PMID: 28525585.
35. Scardigli M, Crocini C, Ferrantini C, Gabbriellini T, Silvestri L, Coppini R, Tesi C, Rog-Zielinska EA, Kohl P, Cerbai E, Poggesi C, Pavone FS, Sacconi L. Quantitative assessment of passive electrical properties of the cardiac T-tubular system by FRAP microscopy. *Proc Natl Acad Sci U S A.* 2017 May 30;114(22):5737-5742. doi: 10.1073/pnas.1702188114. Epub 2017 May 15. PMID: 28507142; PMCID: PMC5465880.
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44. Passini E, Mincholé A, Coppini R, Cerbai E, Rodriguez B, Severi S, Bueno-Orovio A. Mechanisms of pro-arrhythmic abnormalities in ventricular repolarisation and anti-arrhythmic therapies in human hypertrophic

- cardiomyopathy. *J Mol Cell Cardiol.* 2016 Jul;96:72-81. doi: 10.1016/j.yjmcc.2015.09.003. Epub 2015 Sep 16. PMID: 26385634; PMCID: PMC4915817.
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