

Univ.-Prof. Dr. med. Dr. h.c. Dobromir Dobrev, MD, FESC, FEHRA, FISHR, FIACS

Director of Institute of Pharmacology, Faculty of Medicine, University Duisburg-Essen, Germany

Education and Degrees

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| 1985-1988 | Medical studies, Medical University Pécs, Hungary |
| 1988-1992 | Medical studies, Dresden University of Technology, Dresden University of Technology |
| 1994 | MD (Dr. med., magna cum laude), Dresden University of Technology |
| 1998 | Board certified ("Facharzt") in Pharmacology&Toxicology |
| 2002 | Facultas docendi ("Privatdozent") and Venia legendi in Pharmacology&Toxicology |

Professional Career

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| 1992-1994 | "Arzt im Praktikum", Dept. of Clinical Pharmacology, Dresden University of Technology |
| 1994-2008 | Postdoctoral Fellow, Dept. of Pharmacology&Toxicology, Dresden University of Technology |
| 2008-2010 | Professor of Medicine (apl. Prof.), Dresden University of Technology, Dresden |
| 2009- | Appointment as Adjunct Full Professor of Medicine, Montreal Heart Institute, University of Montreal, Montreal, Canada |
| 01.07.2010 | Appointment as Full Professor (W3) of Experimental Cardiology and Chair of Division of Experimental Cardiology, Medical Faculty Mannheim, University Heidelberg, Germany |
| 01.10.2012 | Appointment as Full Professor in Pharmacology and Toxicology (W3) and Director, Institute of Pharmacology, Faculty of Medicine, University Duisburg-Essen, Essen, Germany |
| 01.08.2015 | Appointment as Adjunct Full Professor of Medicine, Department of Molecular Physiology & Biophysics, Baylor College of Medicine, Houston, USA |

Awards and Honours

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| 1999 | Poster Award, Annual Meeting of German Society for Experimental and Clinical Pharmacology and Therapy, Berlin |
| 2000 | Teaching Award, Gesellschaft von Freunden und Förderern der TU Dresden |
| 2001 | Carl Gustav Carus-Teaching Award, Medical Faculty Dresden |
| 2001 | Wilhelm P. Winterstein Research Award, German Heart Foundation |
| 2003 | Abstract Travel Award, AHA Scientific Sessions, Orlando, USA |
| 2004 | Carl Gustav Carus-Teaching Award, Medical Faculty Dresden |
| 2005 | Albert-Fraenkel-Award, German Cardiac Society |
| 2010-2015 | Work package leader, EU FP7-HEALTH-2010 Large-scale Integrating Project ("The European Network for Translational Research in Atrial Fibrillation"; http://www.eutraf.eu/) |
| 2011-2013 | Co-coordinator of Arrhythmia Research Program and Member of Research Coordinating Committee, German Centre for Cardiovascular Research ("Deutsches Zentrum für Herz-Kreislauf Forschung") |
| 2012 | Outstanding Achievement Award, European Cardiac Arrhythmia Society |
| 2007-2013 | Grantee Coordinator, Transatlantic Networks of Excellence in Cardiovascular Research Program of Fondation Leducq, 07CVD03 ("The European-North American Atrial Fibrillation Research Alliance"; http://www.transatlantic-af-alliance.org/) |
| 2017 | Elected Fellow of the International Academy of Cardiovascular Sciences |
| 2018 | Honorary Member of Romanian Society of Cardiology |
| 2018 | Elected Fellow of the International Society for Heart Research (FISHR) |
| 2020 | Elected Fellow of the European Society of Cardiology (FESC) |
| 2021 | Rated #2/#11 (basic/basic+clinical) worldwide expert in Atrial Fibrillation by <i>ExpertScape</i> (ExpertScape.com) |
| 2021 | Elected Fellow of the European Heart Rhythm Association (FEHRA) |
| 2021 | Conferred Honorary Doctorate (Dr. h.c.) by University of Medicine & Pharmacy "Carol Davila", Bucharest, Romania. Ceremony deferred due to Covid-19 pandemic to end of 2021. |

Editorial Boards

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| 2003- | Naunyn Schmiedeberg's Archive of Pharmacology (2005-, Associate Editor) |
| 2004-2019 | Journal of Molecular and Cellular Cardiology |
| 2007- | Cardiovascular Research (Guest Editor of spotlight issues: 2011, 2015, and 2020) |
| 2008-16 | Circulation: Arrhythmia and Electrophysiology (founding member) |
| 2009- | Journal of Ion Channels |
| 2009-2020 | BioMed Research International (Associate Editor) |
| 2009- | Open Journal of Cardiology |
| 2009- | Basic Research in Cardiology |
| 2010- | Frontiers in Cardiac Electrophysiology (Review Editor) |
| 2010- | Pragmatic and Observational Research |
| 2011- | World Journal of Hypertension |
| 2011- | Europace |
| 2012- | Future Cardiology |
| 2013- | Arrhythmia & Electrophysiology Review |
| 2014-2016 | Circulation |
| 2015- | European Heart Journal - Cardiovascular Pharmacotherapy |
| 2016-2019 | International Journal of Cardiology (Associate Editor) |
| 2017- | <u>International Journal of Cardiology Heart & Vasculature</u> (Editor-in-Chief) |
| 2017- | Journal of Interventional Cardiac Electrophysiology |
| 2018 | Canadian Journal of Cardiology (Guest Editor) |
| 2018 | International Journal of Cardiology (Guest Editor) |
| 2018 | Pharmacological Research (Guest Editor) |
| 2019- | Reviews in Cardiovascular Medicine |
| 2020- | <u>International Journal of Cardiology</u> (Deputy Editor) |

Bibliography (Updated on 18.10.2021)

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| Total Publications <i>PubMed</i> | 346 |
| Publications in the Last 5 Years <i>PubMed</i> | 163 |
| Total Impact Factor (incl. work in press) | 3320.3 |
| Average Impact Factor per Article | 11.5 |
| Average Impact Factor per Original Article | 13.3 |
| Total Citations <i>Scopus/GoogleScholar</i> | 28655 / 37443 |
| Citations 2018 | 4103 / 4837 |
| Citations 2019 | 3651 / 4961 |
| Citations 2020 | 3998 / 5564 |
| Citations 2021 | 4161 / 5787 |
| <i>h</i> -Index <i>Scopus/Publons/GoogleScholar</i> | 78 / 76 / 83 |
| <i>m</i> -Index = <i>h</i> -Index per Year since First Paper | 2.9 |

Most Important Publications (citations: *Scopus/GoogleScholar*, update on 15.01.2021)

1. **Dobrev D**, et al. & Ravens U (2001) Molecular basis of downregulation of G-protein-coupled inward rectifying K⁺ current (I_{K,ACh}) in chronic human atrial fibrillation: Decrease in GIRK4 mRNA correlates with reduced I_{K,ACh} and muscarinic receptor-mediated shortening of action potentials. **Circulation**, 104: 2551-2557. (247/333 citations)
2. Christ T, et al. & **Dobrev D** (2004) L-type Ca²⁺ current downregulation in chronic human atrial fibrillation is associated with increased activity of protein phosphatases. **Circulation**, 110: 2651-2657. (199/290 citations)

3. **Dobrev D**, et al. & Ravens U (2005) The G-protein gated potassium current $I_{K_{ACH}}$ is constitutively active in patients with chronic atrial fibrillation. **Circulation**, 112: 3697-3706. (320/452 citations)
4. El-Armouche A, et al. & **Dobrev D** (2006) Molecular determinants of altered Ca^{2+} -handling in human chronic atrial fibrillation. **Circulation**, 114: 670-680. (193/265 citations)
5. Nattel S, Burstein B, **Dobrev D** (2008) Atrial remodelling and atrial fibrillation: mechanisms and implications. **Circ Arrhythm Electrophysiol**, 1: 62-73. (633/1424 citations)
6. Chelu MG, et al. & **Dobrev D***, Wehrens XHT* (2009) Calmodulin kinase II-mediated sarcoplasmic reticulum calcium leak promotes atrial fibrillation in mice. **J Clin Invest**, 119: 1940-1951. *shared senior and correspondence authorship (282/366 citations)
7. **Dobrev D**, Nattel S (2010) New antiarrhythmic drugs for treatment of atrial fibrillation. **The Lancet**, 375(9721): 1212-23. (230/306 citations)
8. **Dobrev D**, Carlsson L, Nattel S (2012) Novel molecular targets for atrial fibrillation therapy. **Nat Rev Drug Discov**, 11(4): 275-91. (140/187 citations)
9. Voigt N, et al. & **Dobrev D** (2012) Enhanced sarcoplasmic reticulum Ca^{2+} leak and increased Na^{+} - Ca^{2+} exchanger function underlie delayed afterdepolarizations in patients with chronic atrial fibrillation. **Circulation**, 125(17): 2059-70. (337/457 citations)
10. Voigt N, et al. & **Dobrev D** (2014) Cellular and molecular mechanisms of atrial arrhythmogenesis in patients with paroxysmal atrial fibrillation. **Circulation**, 129(2): 145-56. (231/334 citations)
11. Heijman J, Voigt N, Nattel S, **Dobrev D** (2014) Cellular and Molecular Electrophysiology of Atrial Fibrillation Initiation, Maintenance and Progression. **Circ Res**, 114(9): 1483-99. (303/421 citations)
12. Schmidt C, et al. & **Dobrev D***, Thomas D* (2015) Upregulation of $K_{2P3.1}$ K^{+} current causes action potential shortening in patients with chronic atrial fibrillation. **Circulation**, 132(2): 82-92. *shared senior authorship (94/113 citations)
13. Nattel S, **Dobrev D** (2016) Electrophysiological and molecular mechanisms of paroxysmal atrial fibrillation. **Nat Rev Cardiol**, 13(10): 575-90. (70/95 citations)
14. Kirchhof P, Benussi S, Kotecha D, ... **Dobrev D** ... Windecker S, Zamorano JL, Zeppenfeld K (2016) 2016 ESC Guidelines for the management of atrial fibrillation developed in collaboration with EACTS: The Task Force for the management of atrial fibrillation of the ESC. Developed with the special contribution of EHRA of the ESC. Endorsed by the European Stroke Organisation (ESO). **Eur Heart J**, 37: 2893-2962. (3719/8036 citations)
15. Abu-Taha IH, et al. & **Dobrev D#**, Wieland T# (2017) Nucleoside Diphosphate Kinase-C Suppresses cAMP Formation in Human Heart Failure. **Circulation**, 135(9): 881-897. #co-senior and co-correspondence authors. (12/16 citations)
16. Heijman J, Guichard JB, **Dobrev D**, Nattel S (2018) Translational challenges in atrial fibrillation. **Circ Res**, 122(5): 752-773. (51/81 citations)
17. Yao C, Veleva T et al. & **Dobrev D**, Li N (2018) Enhanced NLRP3 Inflammasome Signaling Promotes Atrial Fibrillation. **Circulation**, 138: 2227-2242. (95/117 citations)
18. Molina CE, et al. & **Dobrev D** (2018) Profibrotic, Electrical, and Calcium-Handling Remodeling of the Atria in Heart Failure Patients With and Without Atrial Fibrillation. **Front Physiol**, 9: 1383. (21/26 citations)
19. **Dobrev D**, et al. & Nattel S (2019) Post-operative Atrial Fibrillation: Mechanisms, Manifestations and Management. **Nat Rev Cardiol**, 16(7): 417-436. (35/59 citations)
20. Fender AC, et al. & **Dobrev D** (2020) Thrombin receptor PAR4 drives canonical NLRP3 inflammasome signaling in the heart. **Basic Res Cardiol**, 115(2):10. (5/5 citations)
21. Nattel S, Heijman J, Zhou L, **Dobrev D** (2020) The Molecular Basis of Atrial Fibrillation Pathophysiology and Therapy: A Translational Perspective. **Circ Res**, 127: 51-72. (14/21 citations)

22. Heijman J et al. & **Dobrev D** (2020) Atrial Myocyte NLRP3/CaMKII Nexus Forms a Substrate for Post-operative Atrial Fibrillation. **Circ Res**, 127(8): 1036-1055. (6/7 citations)
23. Campbell HM et al. & **Dobrev D**, Wehrens XHT (2020) Loss of SPEG Inhibitory Phosphorylation of Ryanodine Receptor Type-2 Promotes Atrial Fibrillation. **Circulation**, 142(12): 1159-1172. (2/4 citations)
24. Hindricks G, Potpara T, Dagres N... **Dobrev D**... Suwalski P, Svetlosak M, Touyz RM (2021) 2020 ESC Guidelines for the diagnosis and management of atrial fibrillation developed in collaboration with the EACTS and the special contribution of the EHRA of the ESC. **Eur Heart J**, 42(5): 373-498. (-/156 citations)
25. Scott LJ, Fender AC, Saljic A, Li L, Chen X, Wang X, Linz D, Lang J, Hohl M, Twomey D, Pham TT, Diaz-Lankenau R, Chelu MG, Kamler M, Entman ML, Taffet GE, Sanders P, **Dobrev D**, Li N# (2021) NLRP3 Inflammasome Is a Key Driver of Obesity-Induced Atrial Arrhythmias. **Cardiovasc Res**, 117(7): 1746-1759. #equal contribution and shared senior authorship. (-/- citations)
26. Nattel S, Sager PT, Hüser J, Heijman J, **Dobrev D** (2021) Why is translation from basic discoveries to clinical applications is so difficult for atrial fibrillation and possible approaches to improving it. **Cardiovasc Res**, 117(7): 1616-1631. (-/- citations)

Funding History as Principal/Co-Principal Investigator (selection): Total amount: approx. 10 Mio. €

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| 2002-2014 | DFG, DO 769/1-3 (<i>Mechanisms of Constitutive $I_{K,ACH}$ Channels in AF</i>) |
| 2007-2013 | Fondation Leducq, Transatlantic Networks of Excellence in Cardiovascular Research Program, 07CVD03 (<i>European-North American AF Research Alliance</i>) (Grantee Coordinator) |
| 2010-2015 | European Union, FP7-HEALTH-2010, large-scale integrating project, Proposal No: 261057 (<i>The European Network for Translational Research in AF, EUTRAF</i>) (Work Package Leader) |
| 2016-2022 | NIH, R01 HL131517 (<i>Perturbed Sodium and Calcium Fluxes in AF</i> , with Eleonora Grandi, Davis, USA) |
| 2017-2022 | DFG, DO 769/4-1 (<i>Molecular Basis and Proarrhythmic Role of SK Channels in AF</i>) |
| 2017-2022 | NIH, R01 HL136389 (<i>The Role of Inflammasome in the Pathogenesis of AF</i> , with Na Li, Houston, USA) |
| 2019-2023 | NIH, R01 HL089598 (<i>Ryanodine Receptor Regulation in postoperative AF</i> , with Xander Wehrens, Houston, USA) |
| 2021-2026 | European Union, H2020 SC1-BHC-06-2020, large-scale integrating project, Proposal No. 965286 (<i>Machine Learning and Artificial Intelligence for Early Detection of Stroke and Atrial Fibrillation, MAESTRIA</i>) |
| 2021-2025 | NIH, 2R01HL131517-06A1 (<i>Quantifying the Role of Cardiomyocyte Ultrastructure in Atrial Health and Disease</i> , with Eleonora Grandi, Davis, USA) |

Major Committees and Professional Services (Selection)

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| 2007- | Member of Scientific Advisory Board, International Academy of Cardiology. |
| 2007-2010 | Chair, Working Group on Cellular Electrophysiology, German Society of Cardiology. |
| 2007-2011 | Member of Program Committee, German Society of Cardiology. |
| 2007-2008 | Member of Program Committee, European Cardiac Arrhythmia Society. |
| 2009- | Member of Scientific Committee, Paul-David Chair in Cardiovascular Electrophysiology, Montreal Heart Institute, University of Montreal, Canada. |
| 2010 | Member of Scientific Programs Committee, CARDIOSTIM 2010, 17 th World Congress in Cardiac Electrophysiology and Cardiac Techniques, 16-19 June, Nice, France. |
| 2010-2011 | Member of Program Committee, European Heart Rhythm Association (EHRA), Europace 2011, Madrid, Spain. |
| 2010-2011 | Member of Organizing Committee, "Up-date on Arrhythmias: 25 Years of Radiofrequency Ablation". Rosengarten Conference Center Mannheim, September 15–17, 2011, Mannheim, Germany. |

- 2011-2013 Scientific Representative/Principal Investigator of Medical Faculty Mannheim in the German (National) Centre for Cardiovascular Research.
- 2011-2013 Co-Coordinator of "Arrhythmia" Research Programme of the German (National) Centre for Cardiovascular Research.
- 2012-2013 Member of Program Committee of the Annual Meeting of the ESC Working Group on Cardiac Cellular Electrophysiology, 23-24.06.2013, Athens, Greece.
- 2014-2016 Member of Programme Committee of ESC Frontiers in CardioVascular Biology Meeting 2016, Florence, Italy.
- 2013-2014 Reviewer, 2014 ESC/EACTS Guidelines on myocardial revascularization: the Task Force on Myocardial Revascularization of the European Society of Cardiology (ESC) and the European Association for Cardio-Thoracic Surgery (EACTS).
- 2014-2015 Reviewer, 2015 ESC Guidelines for the management of patients with ventricular arrhythmias and the prevention of sudden cardiac death: The Task Force for the Management of Patients with Ventricular Arrhythmias and the Prevention of Sudden Cardiac Death of the European Society of Cardiology (ESC) Endorsed by: Association for European Paediatric and Congenital Cardiology (AEPC).
- 2015-2016 Member of Congress Programme Committee, European Society of Cardiology, Annual Meeting Rome 2016.
- 2015-2016 Reviewer, ESC Guidelines for the management of atrial fibrillation developed in collaboration with EACTS: The Task Force for the management of atrial fibrillation of the ESC. Developed with the special contribution of EHRA of the ESC. Endorsed by the European Stroke Organisation (ESO).
- 2015-2016 Member of Writing Committee, Position Paper on *Atrial Cardiomyopathies: Definition, Characterization and Clinical Implication*, a joint initiative of EHRA, HRS, APHRS and SOLAEGE.
- 2016- Council Member, European Section of International Academy of Cardiovascular Sciences.
- 2017- Member of Programme Committee of EHRA Annual Meeting 2018, Barcelona, Spain.
- 2016-2018 Chair, Working Group on Cardiac Cellular Electrophysiology, European Society of Cardiology.
- 2017-2020 Board Member of European Heart Rhythm Association.
- 2018-2021 Member of Executive Council, International Academy of Cardiovascular Sciences.
- 2018 Chairman, Annual Meeting of the ESC Working Group on Cardiac Cellular Electrophysiology, Essen, Germany.
- 2018-2019 Program Committee Chairman, Annual Meeting of European Cardiac Arrhythmia Society 2019, June 16-18, Marseille, France.
- 2018-2020 Past-Chair, Working Group on Cardiac Cellular Electrophysiology, European Society of Cardiology.
- 2018-2020 Member of Council on Basic Cardiovascular Science, European Society of Cardiology.
- 2019-2020 Member of Programme Committee, FCVB 2020, Budapest, Hungary (postponed to 2021).
- 2019-2023 Member of Nominating Committee, German Society of Cardiology.
- 2020 Member of Nominating Committee, Working Group on Cardiac Cellular Electrophysiology European Society of Cardiology.
- 2020-2024 Nucleus Member, Working Group on Cardiovascular Pharmacotherapy, European Society of Cardiology.
- 2020-2022 Member of Scientific Program Committee for ISHR World Congress in Berlin, June 12-15, 2022.