

**Univ.-Prof. Dr. med. Dobromir Dobrev, FIACS, FISHR**

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

**Education and Degrees**

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**

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, Mannheim, 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**

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 (National) 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, Network Grant 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

**Editorial Boards**

2003- Naunyn Schmiedeberg's Archive of Pharmacology (2005-, Associate Editor)  
2004- Journal of Molecular and Cellular Cardiology  
2007- Cardiovascular Research (Guest Editor: 2009, 2011, 2015)  
2008-16 Circulation: Arrhythmia and Electrophysiology (founding member)

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|-----------|--|
| 2009-     | Journal of Ion Channels  |
| 2009-     | BioMed Research International (formerly Journal of Biomedicine and Biotechnology) ( <u>Section Editor Pharmacology</u> ) |
| 2009-     | Open Journal of Cardiology   |
| 2009-     | Basic Research in Cardiology   |
| 2010-     | Frontiers in Cardiac Electrophysiology ( <u>Review Editor</u> )  |
| 2010-     | Pragmatic and Observational Research   |
| 2011-     | World Journal of Hypertension  |
| 2011-     | Europace   |
| 2012-     | Future Cardiology  |
| 2013-     | Arrhythmia & Electrophysiology Review ( <u>Review Board Member</u> )   |
| 2014-2016 | Circulation  |
| 2015-     | European Heart Journal - Cardiovascular Pharmacotherapy  |
| 2016-     | International Journal of Cardiology ( <u>Deputy/Associate Editor</u> )   |
| 2017-     | International Journal of Cardiology Heart & Vasculature ( <u>Editor-in-Chief</u> )                                       |
| 2017-     | Journal of Interventional Cardiac Electrophysiology  |
| 2018      | Canadian Journal of Cardiology ( <u>Guest Editor</u> )   |
| 2018      | International Journal of Cardiology ( <u>Guest Editor</u> )  |
| 2018      | Pharmacological Research ( <u>Guest Editor</u> )   |
| 2019      | Reviews in Cardiovascular Medicine   |

#### **Bibliography** (Scopus/Science Citation Index, updated 18.07.2019)

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|---|
| 242 articles (110 original & 132 review/editorial/commentary articles)        |
| Total Impact Factor <b>2181.7</b>   |
| Average Impact Factor per Article <b>9.0</b>                                  |
| Average Impact Factor per Original Article <b>10.5</b>                        |
| Citations 2016: <b>2437</b>   |
| Citations 2017: <b>3447</b>   |
| Citations 2018: <b>3853</b>   |
| Total Citations: <b>18733</b>   |
| Total Citations (Google Scholar) <b>26460</b>                                 |
| <i>h</i> -Index <b>67</b>   |
| <i>h</i> -Index (Google Scholar) <b>72</b>                                    |
| <i>m</i> -Index = <i>h</i> -Index per Years of Scientific Activity <b>2.7</b> |

#### **Key Publications** (selection)

1. **Dobrev D**, et al. (2001) Molecular basis of downregulation of G-protein-coupled inward rectifying K<sup>+</sup> 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.
2. Christ T, et al. & **Dobrev D** (2004) L-type Ca<sup>2+</sup> current downregulation in chronic human atrial fibrillation is associated with increased activity of protein phosphatases. *Circulation*, 110: 2651-2657.
3. **Dobrev D**, et al. (2005) The G-protein gated potassium current  $I_{K,ACh}$  is constitutively active in patients with chronic atrial fibrillation. *Circulation*, 112: 3697-3706.
4. El-Armouche A, et al. & **Dobrev D** (2006) Molecular determinants of altered Ca<sup>2+</sup>-handling in human chronic atrial fibrillation. *Circulation*, 114: 670-680.
5. Nattel S, Burstein B, **Dobrev D** (2008) Atrial remodelling and atrial fibrillation: mechanisms and implications. *Circ Arrhythm Electrophysiol*, 1: 62-73.
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

7. Dobrev D, Nattel S (2010) New antiarrhythmic drugs for treatment of atrial fibrillation. *The Lancet*, 375(9721): 1212-23.
8. Wakili R, Voigt N, Kääb S, Dobrev D, Nattel S (2011) Recent advances in the molecular pathophysiology of atrial fibrillation. *J Clin Invest*, 121(8): 2955-2968.
9. Dobrev D, Carlsson L, Nattel S (2012) Novel molecular targets for atrial fibrillation therapy. *Nat Rev Drug Discov*, 11(4): 275-91.
10. Voigt N, et al. & Dobrev D (2012) Enhanced sarcoplasmic reticulum  $\text{Ca}^{2+}$  leak and increased  $\text{Na}^+ \text{-Ca}^{2+}$  exchanger function underlie delayed afterdepolarizations in patients with chronic atrial fibrillation. *Circulation*, 125(17): 2059-70. (Highlighted in Circulation's "Most Read Articles in Arrhythmia and Electrophysiology", *Circulation*. 2013; 127: e509-19).
11. Voigt N, Heijman J, et al. & Dobrev D (2014) Cellular and molecular mechanisms of atrial arrhythmogenesis in patients with paroxysmal atrial fibrillation. *Circulation*, 129(2): 145-56.
12. Heijman J, Voigt N, Nattel S, Dobrev D (2014) Compendium: Cellular and Molecular Electrophysiology of Atrial Fibrillation Initiation, Maintenance and Progression. *Circ Res*, 114(9): 1483-99.
13. Schmidt C, et al. & Dobrev D\*, Thomas D\* (2015) Upregulation of  $\text{K}_{2\text{P}3.1}$   $\text{K}^+$  current causes action potential shortening in patients with chronic atrial fibrillation. *Circulation*, 132(2): 82-92. \*shared senior authorship
14. Nattel S\*, Dobrev D\* (2016) Electrophysiological and molecular mechanisms of paroxysmal atrial fibrillation. *Nat Rev Cardiol*, 13(10): 575-90. \*equally contributing authors.
15. 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.
16. 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.
17. Nattel S, Dobrev D (2017) Controversies About Atrial Fibrillation Mechanisms: Aiming for Order in Chaos and Whether it Matters. *Circ Res*, 120(9): 1396-1398.
18. Heijman J, Guichard JB, Dobrev D, Nattel S (2018) Translational challenges in atrial fibrillation. *Circ Res*, 122(5): 752-773.
19. Yao C#, Veleva T# et al. & Dobrev D, Li N (2018) Enhanced NLRP3 Inflammasome Signaling Promotes Atrial Fibrillation. *Circulation*, 138: 2227-2242. #these authors contributed equally to the manuscript.
20. Molina CE, Abu-Taha IH, Wang Q, Roselló-Díez E, Kamler M, Nattel S, Ravens U, Wehrens XHT, Hove-Madsen L, Heijman J, 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. Dobrev D, Aguilar M, Heijman J, Guichard JB, Nattel S (2019) Post-operative Atrial Fibrillation: Mechanisms, Manifestations and Management. *Nat Rev Cardiol*, 16(7): 417-436.

#### Funding History as Principal/Co-Principal Investigator (selection)

2002-2006 DFG, Single Project Grant DO 769/1-1&2 (*Cardiac Muscarinic Receptors in Atrial Fibrillation*)

2003-2013 BMBF 01GI0204, AFNET, Projects C3 and C4 (*Electrical Remodelling in Atrial Fibrillation*)

2008-2014 DFG, Single Project Grant DO 769/1-3 (*Mechanisms of Constitutive  $I_{K, \text{ACh}}$  Channels in Atrial Fibrillation*)

2007-2013 Fondation Leducq, Transatlantic Networks of Excellence in Cardiovascular Research Program, Network Grant 07CVD03 (*European-North American Atrial Fibrillation Research Alliance*) (Grantee Coordinator)

2010-2015 European Union, FP7-HEALTH-2010, large-scale integrating project, Proposal No: 261057 (*The European Network for Translational Research in Atrial Fibrillation, EUTRAF*) (Work Package Leader)

2011-2013 BMBF, Principal Investigator and Scientific Representative of Medical Faculty Mannheim in the German (National) Centre for Cardiovascular Research ("Deutsches Zentrum für Herz-Kreislauf-Forschung") through *Heidelberg University Research Centre for Cardiomyopathies and Arrhythmias – From Genes to Translation (HEURECA)*

2016-2021 National Institutes of Health USA, R01 HL131517, *Perturbed Sodium and Calcium Fluxes in Atrial Fibrillation*, joint project with UC Davis, Davis, USA

2017-2020 DFG, Single Project Grant DO 769/4-1, *Molecular Basis and Proarrhythmic Role of Small-Conductance  $Ca^{2+}$ -Activated  $K^+$  Channels in Atrial Fibrillation*

2017-2021 National Institutes of Health USA, R01 HL136389, *The Role of Inflammasome in the Pathogenesis of Atrial Fibrillation*, joint project with Baylor College of Medicine, Houston, USA

2019-2023 National Institutes of Health USA, R01 HL089598, *Ryanodine Receptor Regulation in Postoperative Atrial Fibrillation*, joint project with Baylor College of Medicine, Houston, USA

**Total amount: approx. 9 Mio. €**

**Major Committees and Professional Services (Selection)**

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, CARDIOTIM 2010, 17<sup>th</sup> 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

2017-2018 Organizer and Chairman, Annual Meeting of the ESC Working Group on Cardiac Cellular Electrophysiology, 15-17 June 2017, Essen, Germany.

2018- Member of Executive Council, International Academy of Cardiovascular Sciences

2018- Member of Writing Committee, EHRA White Paper “Knowledge gaps in arrhythmia management: status 2019”.

2018-2020 Council Member, European Society of Cardiology

2018-2019 Program Committee Chairman, Annual Meeting of European Cardiac Arrhythmia Society 2019, June 16-18, Marseille, France.