

CURRICULUM VITAE

Ye Chen-Izu M.S. Ph.D. F.A.H.A. Professor Department of Pharmacology, School of Medicine (SOM) Department of Biomedical Engineering, College of Engineering (COE) Department of Internal Medicine, Division of Cardiology, SOM University of California, Davis, California, USA	<i>website:</i> https://bme.ucdavis.edu/izulab/ <i>e-mail:</i> ychenizu@ucdavis.edu <i>Address:</i> 451 Health Science Drive Department of Pharmacology University of California Davis, CA 95616, USA
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PROFESSIONAL POSITIONS

START	END	POSITION TITLE	DEPARTMENT	INSTITUTION
2018	present	Full Professor (Tenured, Step-2.5)	Pharmacology, Bioengineering, Internal Medicine / Cardiology	University of California, Davis, Davis, CA, USA
2014	2018	Associate Professor (Tenured)	Pharmacology, Bioengineering, Internal Medicine / Cardiology	University of California, Davis, Davis, CA, USA
2009	2014	Assistant Professor (Tenure track)	Pharmacology, Bioengineering, Internal Medicine / Cardiology	University of California, Davis, Davis, CA, USA
2005	2008	Assistant Professor	Internal Medicine / Cardiology	University of Kentucky, Lexington, KY, USA
2002	2004	Instructor	Internal Medicine / Cardiology	University of Maryland, Baltimore, MD, USA

EDUCATION & TRAINING

START	END	DEGREE	SCIENTIFIC DISCIPLINE	INSTITUTION
01/2000	08/2002	Post-Doctoral Associate	Molecular & Cellular Cardiology	University of Maryland, Baltimore, USA
07/1995	06/1999	NIH Staff Fellow	Cardiac Electrophysiology	National Institute on Aging, Baltimore, USA
07/1994	06/1995	Post-Doctoral Fellow	Molecular Biology	State University of New York (SUNY) at Buffalo, USA
07/1988	06/1994	Ph.D.	Biophysics	State University of New York (SUNY) at Buffalo, USA
07/1985	06/1988	M.S.	Bioengineering	Tsinghua University Beijing, China
07/1980	06/1985	B.S.	Physics	National University of Defense Science and Technology, China

SIGNIFICANT PROFESSIONAL ACTIVITIES

Fellow of the American Heart Association (FAHA)

2014- Elected Fellow of the American Heart Association and the Council on Basic Cardiovascular Research.

Professional Societies Membership

- American Heart Association / American Stroke Association
- International Society for Heart Research (ISHR)
- Biophysical Society
- Biomedical Engineering Society
- Cardiac Muscle Society
- American Society of Hypertension
- American Association for the Advancement of Science
- Federation of American Societies for Experimental Biology
- National Science Teachers Association

Editorial Board Membership

2017- Associate Editor of the Journal of Molecular and Cellular Cardiology (*Impact Factor* 5.680)

2018- Guest Editor of the Journal of Physiology (London) special issue (*Impact Factor* 4.739)

2015- Editorial Board, Frontiers in Pharmacology

Pharmacology of Ion Channels and Channelopathies (*Impact Factor* 4.418)

2013-2017 Editorial board of the ISRN Cardiology (online)

International and USA Grants Reviewer

2017-2021 National Institute of Health (**NIH**) Grant Review Group: Electrical Signaling, Ion Transport, and Arrhythmias (**ESTA**), Regular Review Group Member

2018 The European Research Council grant

2018 US-Israel Binational Science Foundation grant

2016 NIH Grant Review Group – Special Emphasis Panel (SEP)

2015 NIH Grant Review Group – Cardiovascular Differentiation and Development (CDD)

2015 NIH Grant Review Group – Electrical Signaling, Ion Transport, and Arrhythmias (ESTA)

2015 American Heart Association (**AHA**) Grant Review Panel – Cell Transport

2015 The Netherlands Organisation for Health Research and Development grant

2015 Reviewer for the University of California Bridge Funding

2014 Reviewer for the University of California Bridge Funding

2014 AHA Grant Review Panel – Cardiac Biological Regulation

2011 AHA Grant Review Panel – Cardiac Electrophysiology

2011 Reviewer for the University of Wisconsin-Milwaukee, Research Growth Initiative (RGI) Grant

2010 AHA Grant Review Panel – Cardiac Electrophysiology

Professional Journal Reviewer

Regular reviewer for 20+ professional journals in medicine, biology, physics, and science education

- Proceedings of National Academy of Science (PNAS)
- Science Translational Medicine
- Science Signaling
- Circulation Research
- Circulation
- Cardiovascular Research
- Journal of Cellular and Molecular Cardiology (JMCC)
- Biophysical Journal
- Physical Review X
- Journal of Physiology
- Journal of General Physiology
- American Journal of Physiology
- International Journal of Cardiology
- Pflügers Archiv (European Journal of Physiology)
- PLoS ONE
- Current Medicinal Chemistry
- Molecular Cell Research
- Journal of Visual Experiments
- Annals of Biomedical Engineering
- ACS Chemical Neuroscience
- National Center for Case Study in Teaching Sciences Publication

Invited Speaker

Dr. Chen-Izu's research has been well-recognized by the international scientific community. She has been invited to give 50+ scientific presentations and seminars in many universities (USA, China, Japan, Germany, Hungary...), pharmaceutical industry, and international conferences (International Society of Heart Research Meetings, Biophysical Society Annual Meetings, Gordon Research Conferences, etc.).

Organizer of International Scientific Conferences (<https://basicscience.ucdmc.ucdavis.edu/UCDavisCardiovascularSymposia/index.html>)

Dr. Chen-Izu is the organizer of the international conference series on ***"Systems approach to understanding cardiac excitation-contraction and arrhythmia mechanisms"***. Since 2010, this biennial conference series at UC Davis brings together world-renowned experimental researchers and mathematical modelers (from 12+ countries in North America, South America, Europe, and Asia) to develop interdisciplinary collaborations, discuss consensus and controversies, and identify pressing issues for future investigation in cardiac excitation-contraction coupling and heart disease field.

2020 Integrative Study of Cardiac E-C Coupling and Heart Diseases

2018 Mechanics and Energetics in Cardiac Arrhythmias and Heart Failure

2016 K⁺ channels and Regulation

2014 Na⁺ channels and Na⁺ transport

2012 Ca²⁺ current and SR Ca²⁺ release

2010 Systems Approach to Understanding Heart Diseases

TEACHING, MENTORING, AND CURRICULUM DEVELOPMENT

- 2003-Present PI and mentor for post-doctoral fellows, PhD candidates, graduate students, and undergraduate research interns.
- 2009-present Instructor of Record (IOR) and Curriculum Developer of UC Davis College of Engineering course BIM163 (4 units) on *Bioelectricity, Signaling systems, and Biomechanics*
- 2012-present Co-Director and Mentor of the T32 Training Program in Cardiovascular Sciences, School of Medicine, UC Davis
- 2015-present Mentor in the Beckman Scholars Program for Undergraduate Research, Biomedical Engineering, College of Engineering, UC Davis
- 2012-2015 Mentor of Howard Hughes Medical Institute Cardiovascular Track Translational Learning Group, School of Medicine, UC Davis

GRANT AND CONTRACT

On-going Grants

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|---|--------------------------------|
| (1) NIH/NHLBI R01 HL141460 | 01/02/2019 – 11/30/2022 |
| Principle Investigator (PI): Chen-Izu Y
<i>"Mechanical Load Effect on Cardiac Excitation-Contraction Coupling"</i> | |
| (2) NIH/NHLBI R01 HL149431 | 12/20/2019 – 11/30/2023 |
| Multi-PI: Izu LT, Chen-Izu Y
<i>"The Functional Connectome of the Mechanically Loaded Cardiomyocyte"</i> | |
| (3) NIH/NHLBI R01 HL123526 | 08/01/2015 – 07/31/2020 |
| PI: Chen-Izu Y,
<i>"Novel Cell-in-Gel device for studying Mechano-chemo transduction at single cell level"</i> | |
| (4) NIH/NHLBI R01 HL085844 | 12/15/2016 – 11/30/2020 |
| PI: Chiamvimonvat N, Co-Investigator: Chen-Izu Y
<i>"Functional Interactions of Cardiac Ion Channels"</i> | |
| (5) NIH/NHLBI R01 HL137228 | 04/01/2017 – 03/31/2021 |
| PI: Chiamvimonvat N, Co-I: Chen-Izu Y
<i>"Decoding the enigma of cardiac amplification"</i> | |
| (6) NIH/NHLBI T32 HL0863500 | 07/01/2018 – 06/30/2023 |
| PI: Chiamvimonvat; Co-I: Chen-Izu Y
<i>Training Program in Basic and Translational Cardiovascular Science</i> | |
| (7) American Heart Association Grant 18CDA34110060 | 07/01/2018 – 06/30/2021 |
| PI: Padamini Sirish Collaborator: Chen-Izu Y
<i>"Development of Novel Upstream Target for Atrial Fibrillation"</i> | |
| (8) NIH/NHLBI R01 HL085727 | 04/01/2019-03/31/2023 |
| PI: Chiamvimonvat N, Co-I: Chen-Izu Y | |

Title: Translational Study of Cardiac Dysfunction

(9) NIH/NHLBI R13 HL147532-01

01/01/2020 – 12/30/2020

Multi-PI: Ye Chen-Izu, Donald M Bers

UC Davis Cardiovascular Symposium: Systems approach to understanding cardiac arrhythmias

Completed Grants

(10) NIH/NHLBI R01 HL141460S2

01/02/2018 – 06/30/2019

PI: Chen-Izu Y, Izu LT, co-I: Coulibaly Z

"Modeling mechano-chemo-transduction"

(11) NIH R01 HL123526-03S1

09/01/2017 – 03/30/2018

PI: Chen-Izu Y

"Cell-in-Gel" technology for Cardiotoxicity Screening

(12) NIH/NHLBI R13HL110618

02/15/2018 – 01/31/2019

Multi-PI: Ye Chen-Izu, Donald M Bers; Co-I: Nipavan Chiamvimonvat, Leighton T Izu

UC Davis Cardiovascular Symposium: Systems approach to understanding cardiac arrhythmias

(13) NIH/NHLBI T32 HL0863500

07/01/2013 – 06/30/2018

PI: Chiamvimonvat N, Co-I: Chen-Izu Y

Title: Decoding the enigma of cardiac amplification

(14) American Heart Association 16GRNT31300018

07/01/2016 - 06/30/2018

PI: Daisuke Sato; Co-Investigator: Chen-Izu Y

"Multiscale Modeling of Cardiac Dynamics: How mechano-electric coupling promotes or suppresses cardiac arrhythmias"

(15) NIH/NHLBI F31 HL129746

09/30/2016 – 08/31/2018

Sponsor: Chen-Izu Y PI: Shimkunas R.

"Mechano-chemo transduction in the single rabbit cardiomyocyte contracting in cross-linked 3D viscoelastic gel"

(16) American Heart Association Grant in Aid

07/01/2014 – 06/30/2016

PI: Chen-Izu Y

Title: "Mechano-chemo-transduction underlying mechanical stress induced arrhythmias"

(17) NIH/NHLBI - R13HL110618

03/02/16 – 02/28/2017

Multi-PI: Ye Chen-Izu, Donald M Bers, Nipavan Chiamvimonvat, Eleanora Grandi

Systems approach to understanding cardiac arrhythmias (UC Davis Cardiovascular Symposium)

(18) Gilead Research Grant

04/01/2014 – 3/30/2015

PI: Chen-Izu Y

Title: "Late Na⁺ Current and inhibitor effects in arrhythmogenic rabbit heart failure model"

(19) NIH/NHLBI R01 HL090880

07/01/2009 - 06/30/2014

Multi-PI: Leighton T Izu, multi-PI: Chen-Izu Y

Title: "Sarcomere Length Shortening and the Destabilization of the Ca²⁺ Control System in Cardiac Cells: Linking Contractile System Defects to Arrhythmias"

(20) Gilead Research Grant

04/01/2013 – 03/31/2014

PI: Chen-Izu Y

Title: "Late Na⁺ Current and inhibitor effects in arrhythmogenic rabbit heart failure model"

(21) NIH/NHLBI S10 OD010389

06/01/2013-05/31/2014

PI: Chiamvimonvat N; Co-I: Chen-Izu Y

Equipment grant: In vivo ultrasound imaging system (VEVO 2100) Visual Sonics

(22) Gilead Research Grant

04/01/2012 – 03/31/2013

PI: Chen-Izu Y

Title: "Late Na⁺ Current during the Action Potential and its Role in Generating Cardiac Arrhythmias"

(23) NIH/NHLBI - R13HL110618

04/01/2012 – 03/31/2013

PI: Ye Chen-Izu, Donald M Bers, Nipavan Chiamvimonvat, Leighton T Izu

Systems approach to understanding cardiac arrhythmias (UC Davis Cardiovascular Symposium)

(24) University of California Senate Research Grant

07/01/2012 - 09/30/2013

PI: James Chan; Co-I: Chen-Izu Y

Title: Multimodal Second Harmonic Generation (SHG) and Fluorescence Microscopy for studying heart disease mechanisms

(25) University of California Discovery Grant

09/14/2012 - 09/14/2013

PI: Kit S Lam, Co-I: Chen-Izu Y

Title: "Novel hydrogel for stem cell and cardiomyocyte research"

(26) NIH/NIA R03 AG31944,

02/01/2009 - 12/31/2011

PI: Chen-Izu Y

"CaMKII Inhibition as a New Therapeutic Strategy for Treating Hypertension-induced heart diseases"

(27) American Heart Association National Center Scientist Development Grant 07/01/2003–6/30/2008

PI: Ye Chen-Izu

Title: "Ca²⁺ and Calmodulin Signaling in the Cardiac Myocyte under Hypertensive Stress"

PATENT

U.S. Patent No. 10,539,552 (Issue date: January 21, 2020)

Title: Compositions and Methods for Measuring Cellular Mechanical Stress

Chen-Izu Y, Kit S. Lam, Leighton T Izu, the Regents of the University of California

PUBLICATION

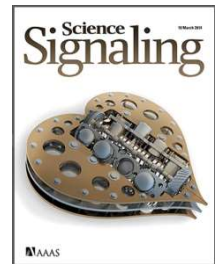
Articles in peer-reviewed professional journals (Lead/Senior Corresponding Author*)

- (1) Hegyi B, **Chen-Izu Y**, Izu LT, Rajamani S, Belardinelli L, Bers DM, Bányász T. *Balance Between Rapid Delayed Rectifier K⁺ Current and Late Na⁺ Current on Ventricular Repolarization: An Effective Antiarrhythmic Target?* Circ Arrhythm Electrophysiol. 2020 Apr;13(4): e008130. doi: 10.1161/CIRCEP.119.008130. Epub 2020 Mar 23. PMID: 32202931 [Review article]
- (2) Bers DM, Kohl P, **Chen-Izu Y**. *Special issue: Mechanics and energetics in cardiac arrhythmias and heart failure.* J Physiol. 2020 Jan 30. doi: 10.1113/JP279385. PMID:31998965 [Editorial]
- (3) Izu LT*, Kohl P*, Boyden PA, Miura M, Banyasz T, Chiamvimonvat N, Trayanova N, Bers DM, **Chen-Izu Y**. *Mechano-electric and mechano-chemo-transduction in cardiomyocytes.* J Physiol. 2019 Dec 2. doi: 10.1113/JP276494. PMID: 31789427 [Review article]
- (4) Hegyi B, **Chen-Izu Y**, Izu LT, Bányász T. *Altered K⁺ current profiles underlie cardiac action potential shortening in hyperkalemia and β -adrenergic stimulation.* Can J Physiol Pharmacol. 2019 Aug;97(8):773-780. PMID: 31091413 [Research article]
- (5) Jieying Hu, Ming Huang, Naoaki Ono, **Ye Chen-Izu**, Leighton Izu, and Shigehiko Kanaya*. *Cardiotoxicity Prediction Based on Integrated hERG Database with Molecular Convolution Model.* Proceedings of the IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM 2019), November 18-21, 2019, San Diego, CA, USA [Research article]
- (6) Hegyi B, Morotti S, Liu C, Ginsburg KS, Bossuyt J, Belardinelli L, Izu LT, **Chen-Izu Y**, Bányász T, Grandi E, Bers DM. *Enhanced Depolarization Drive in Failing Rabbit Ventricular Myocytes.* Circulation Arrhythm Electrophysiol. 2019 Mar;12(3):e007061. doi: 10.1161/CIRCEP.118.007061. PMID: 30879336 [Research article]
- (7) Hegyi B*, Bányász T, Izu LT, Belardinelli L, Bers DM, **Chen-Izu Y***. *β -adrenergic regulation of late Na⁺ current during cardiac action potential is mediated by both PKA and CaMKII.* J Mol Cell Cardiol. 2018 Oct; 123:168-179. doi: 10.1016/j.yjmcc.2018.09.006. Epub 2018 Sep 18. PMID:30240676 [Research article]
- (8) Reddy GR, West TM, Jian Z, Jaradeh M, Shi Q, Wang Y, **Chen-Izu Y**, Xiang YK*. *Illuminating cell signaling with genetically encoded FRET biosensors in adult mouse cardiomyocytes.* J Gen Physiol. 2018 Sep 21. pii: jgp.201812119. doi: 10.1085/jgp.201812119. PMID: 30242036 [Research article]
- (9) Mohammad Kazemi-Lari, John Shaw*, Alan Wineman, Rafael Shimkunas, Leighton Izu, **Ye Chen-Izu**. *VISCOELASTIC ESHELBY ANALYSIS OF CARDIOMYOCYTE CONTRACTION IN THE CELL-IN-GEL SYSTEM.* Proceedings of the ASME 2018 Conference on Smart Materials, Adaptive Structures and Intelligent Systems. SMASIS 2018 September 10-12, 2018, San Antonio, TX, USA [Research article]
- (10) Zhang XD, Coulibaly ZA, Chen WC, Ledford HA, Lee JH, Sirish P, Dai G, Jian Z, Chuang F, Brust-Mascher I, Yamoah EN, **Chen-Izu Y**, Izu LT, Chiamvimonvat N*. *Coupling of SK channels, L-type Ca²⁺ channels, and ryanodine receptors in cardiomyocytes.* Science Report 2018 Mar 16;8(1):4670. doi: 10.1038/s41598-018-22843-3. PMID:29549309 [Research article]
- (11) Hegyi B, Bossuyt J, Griffiths LG, Shimkunas R, Coulibaly Z, Jian Z, Grimsrud KN, Sondergaard CS, Ginsburg KS, Chiamvimonvat N, Belardinelli L, Varró A, Papp JG, Pollesello P, Levijoki J, Izu LT, Boyd WD, Bányász T, Bers DM, **Chen-Izu Y***. *Complex electrophysiological remodeling in postinfarction ischemic*

- heart failure*. Proc Natl Acad Sci U S A. 2018 Mar 27;115(13): E3036-E3044 pii: 201718211. doi: 10.1073/pnas.1718211115. PMID: 29531045 [Research article]
- (12) Hegyi B, Bossuyt J, Ginsburg KS, Mendoza LM, Talken L, Ferrier WT, Pogwizd SM, Izu LT, **Chen-Izu Y**, Bers DM*. *Altered Repolarization Reserve in Failing Rabbit Ventricular Myocytes: Calcium and β -Adrenergic Effects on Delayed- and Inward-Rectifier Potassium Currents*. Circ. Arrhythm. Electrophysiol. 2018 Feb;11(2): e005852. doi: 10.1161/CIRCEP.117.005852. PMID:29437761 [Research article]
- (13) Coulibaly Z, **Chen-Izu Y**, Izu LT. *Avoiding phantasms*. Cardiovasc Res. 2017 Dec 1;113(14):1703-1704. doi: 10.1093/cvr/cvx195. PMID:29036639 [Editorial]
- (14) Sirish P, Ledford HA, Timofeyev V, Thai PN, Ren L, Kim HJ, Park S, Lee JH, Dai G, Moshref M, Sihn CR, Chen WC, Timofeyeva MV, Jian Z, Shimkunas R, Izu LT, Chiamvimonvat N, **Chen-Izu Y**, Yamoah EN*, Zhang XD. *Action Potential Shortening and Impairment of Cardiac Function by Ablation of *Slc26a6**. Circ Arrhythm Electrophysiol. 2017 Oct;10(10). pii: e005267. doi: 10.1161/CIRCEP.117.005267. PMID:29025768 [Research article]
- (15) Hegyi B, Horváth B, Váczi K, Gönczi M, Kistamás K, Ruzsnavszky F, Veress R, Izu LT, **Chen-Izu Y**, Bányász T, Magyar J, Csernoch L, Nánási PP, Szentandrassy N*. *Ca^{2+} -activated Cl^- current is antiarrhythmic by reducing both spatial and temporal heterogeneity of cardiac repolarization*. J Mol Cell Cardiol. 2017 Aug; 109:27-37. [Research article]
- (16) **Y Chen-Izu*** and LT Izu*. *Mechano-chemo-transduction in cardiac myocytes*. J. Physiol. (2017) Jan 18. 15;595(12):3949-3958. doi: 10.1113/JP273101. [Review and New Perspective]
- (17) Bers DM, **Chen-Izu Y**. *K^+ channels and cardiac electrophysiology*. J. Physiol. (2017) Apr 1;595(7):2205-2207. doi: 10.1113/JP274181. [Editorial]
- (18) Grandi E*, Sanguinetti MC, Bartos DC, Bers DM, **Chen-Izu Y**, Chiamvimonvat N, Colecraft HM, Delisle BP, Heijman J, Navedo MF, Noskov S, Proenza C, Vandenberg JI, Yarov-Yarovoy V. *Potassium channels in the heart: structure, function and regulation*. J Physiol. 2017 Apr 1;595(7):2209-2228. doi: 10.1113/JP272864 [Review]
- (19) Chiamvimonvat N, **Chen-Izu Y**, Clancy CE, Deschenes I, Dobrev D, Heijman J, Izu L, Qu Z, Ripplinger CM, Vandenberg JI, Weiss JN, Koren G, Banyasz T, Grandi E, Sanguinetti MC, Bers DM, Nerbonne JM. *Potassium currents in the heart: Functional roles in repolarization, arrhythmia and therapeutics*. Journal of Physiol. 2017 Apr 1;595(7):2229-2252. doi: 10.1113/JP272883. [Review]
- (20) Leighton Izu, **Ye Chen-Izu**. *“Wave Theory of Image Formation in a Microscope: Basic Theory and Experiments”* Modern Tools of Biophysics: ISBN 978-1-4939-6713-1 (2017) Springer [Book Chapter]
- (21) **Ye Chen-Izu**, Leighton T. Izu, Bence Hegyi, Tamas Banyasz. *“Recording of Ionic Currents Under Physiological Conditions: Action Potential-Clamp and ‘Onion-Peeling’ Techniques”* Modern Tools of Biophysics: ISBN 978-1-4939-6713-1 (2017) Springer [Book Chapter]
- (22) Hegyi B, Bányász T, Shannon TR, **Chen-Izu Y**, Izu LT*. *Electrophysiological Determination of Submembrane Na^+ Concentration in Cardiac Myocytes*. Biophys J. 111(6):1304-15 (2016). [Research article]
- (23) Uchinoumi H, Yang Y, Oda T, Li N, Alsina KM, Puglisi JL, **Chen-Izu Y**, Cornea RL, Wehrens XH, Bers DM*. *$CaMKII$ -dependent phosphorylation of RyR2 promotes targetable pathological RyR2 conformational shift*. J Mol Cell Cardiol. 98:62-72 (2016). [Research article]

- (24) Jian Z, Chen YJ, Shimkunas R, Jian Y, Jaradeh M, Chavez K, Chiamvimonvat N, Tardiff JC, Izu LT, Ross RS, **Chen-Izu Y***. *In Vivo Cannulation Methods for Cardiomyocytes Isolation from Heart Disease Models*. PLoS One. 11(8): e0160605 (2016). [Research article]
- (25) Awasthi S, Izu LT, Mao Z, Jian Z, Landas T, Lerner A, Shimkunas R, Woldeyesus R, Bossuyt J, Wood B, Chen YJ, Matthews DL, Lieu DK, Chiamvimonvat N, Lam KS, Chen-Izu Y*, Chan JW*. (*corresponding authors) *Multimodal SHG-2PF Imaging of Microdomain Ca^{2+} -Contraction Coupling in Live Cardiac Myocytes*. Circ Res. 22:118(2):e19-28 (2016). [Research article]
- (26) Izu LT*, Bányász T, **Chen-Izu Y**. *Optimizing Population Variability to Maximize Benefit*. PLoS One. 10(12): e0143475 (2015). [Research article]
- (27) Hegyi B, **Chen-Izu Y**, Jian Z, Shimkunas R, Izu LT, Banyasz T*. *KN-93 inhibits IKr in mammalian cardiomyocytes*. J Mol Cell Cardiol. 89:173-6 (2015). [Research article]
- (28) Nakajima K, Zhu K, Sun YH, Hegyi B, Zeng Q, Murphy CJ, Small JV, **Chen-Izu Y**, Izumiya Y, Penninger JM, Zhao*. *KCNJ15/Kir4.2 couples with polyamines to sense weak extracellular electric fields in galvanotaxis*. Nature Commun. 6:8532 (2015). [Research article]
- (29) Oda T, Yang Y, Uchinoumi H, Thomas DD, **Chen-Izu Y**, Kato T, Yamamoto T, Yano M, Cornea RL, Bers DM*. *Oxidation of ryanodine receptor (RyR) and calmodulin enhance Ca release and pathologically alter, RyR structure and calmodulin affinity*. J Mol Cell Cardiol. 85:240-8 (2015). [Research article]
- (30) **Chen-Izu, Y***, Shaw, RM, Pitt, GS, Yarov-Yarovoy, V, Sack, JT, Abriel, H, Aldrich, RW, Belardinelli, L, Cannell, MB, Catterall, WA, Chazin, WJ, Chiamvimonvat, N, Deschenes, I, Grandi, E, Hund, TJ, Izu, LT, Maier, LS, Maltsev, VA, Marionneau, C, Mohler, PJ, Rajamani, S, Rasmusson, RL, Sobie, EA, Clancy, CE, Bers, DM. *Na(+) channel function, regulation, structure, trafficking and sequestration*. The Journal of physiology, 593(6): 1347-60 (2015). [Review]
- (31) Clancy, CE*, **Chen-Izu, Y**, Bers, DM, Belardinelli, L, Boyden, PA, Csernoch, L, Despa, S, Fermini, B, Hool, LC, Izu, L, Kass, RS, Lederer, WJ, Louch, WE, Maack, C, Matiazzi, A, Qu, Z, Rajamani, S, Ripplinger, CM, Sejersted, OM, O'Rourke, B, Weiss, JN, Varró, A, Zaza, A. *Deranged sodium to sudden death*. The Journal of physiology, 593(6): 1331-45 (2015). [Review]
- (32) Shattock, MJ*, Ottolia, M, Bers, DM, Blaustein, MP, Boguslavskyi, A, Bossuyt, J, Bridge, JH, **Chen-Izu, Y**, Clancy, CE, Edwards, A, Goldhaber, J, Kaplan, J, Lingrel, JB, Pavlovic, D, Philipson, K, Sipido, KR, Xie, ZJ. *Na⁺/Ca²⁺ exchange and Na⁺/K⁺-ATPase in the heart*. The Journal of physiology, 593(6): 1361-82 (2015). [Review]
- (33) Bers DM, **Chen-Izu Y**. *Sodium and calcium regulation in cardiac myocytes: from molecules to heart failure and arrhythmia*. The Journal of physiology, 593(6): 1327-9 (2015). [Editorial]
- (34) Banyasz, T*, Szentandrassy, N, Magyar, J, Szabo, Z, Nánási, PP, **Chen-Izu, Y**, Izu, LT. *An emerging antiarrhythmic target: late sodium current*. Current pharmaceutical design, 21(8): 1073-90 (2015). [Review]
- (35) Pei-Chi Yang, YeJia Song, Wayne R. Giles, Balazs Horvath, **Ye Chen-Izu**, Luiz Belardinelli, Sridharan Rajamani, and Colleen Clancy*. *A Computational modeling approach combined with cellular electrophysiology data predicts therapeutic benefit of targeting late INa*. J Physiol, 593(6): 1429-42 (2015). [Research article]

- (36) Eleftherios Makris, Brian Huang, Jerry Hu, **Ye Chen-Izu**, Kyriacos Athanasiou*. *Digoxin and ATP enhance the functional properties of neocartilage implants through intracellular ion modulation*. Tissue Engineering, 21(5-6): 884-94 (2015). [Research article]
- (37) Jian, Z, Han, H, Zhang, T, Puglisi, J, Izu, LT, Shaw, JA, Onofiok, E, Erickson, JR, Chen, YJ, Horvath, B, Shimkunas, R, Xiao, W, Li, Y, Pan, T, Chan, J, Banyasz, T, Tardiff, JC, Chiamvimonvat, N, Bers, DM, Lam, KS, **Chen-Izu, Y***. *Mechanotransduction during cardiomyocyte contraction is mediated by localized nitric oxide signaling*. Science signaling, 7(317): ra27 (2014). [Research article, featured on Cover page with Editorial]
- (38) Bengt Svensson, Tetsuro Oda, Florentin R. Nitu, Yi Yang, Justin Cornea, **Ye Chen-Izu**, James D. Fessenden, Donald Bers, David D. Thomas, and Razvan Cornea*. *FRET-Based Trilateration of Probes Bound within Functional Ryanodine Receptors*. Biophysical J, 107(9): 2037-48 (2014). [Research article]
- (39) Banyasz, T, Jian, Z, Horvath, B, Khabbaz, S, Izu, LT, **Chen-Izu, Y***. *Beta-adrenergic stimulation reverses the I_{Kr-I} Ks dominant pattern during cardiac action potential*. Pflügers Archiv - European Journal of Physiology (2014) 466:2067–2076 (2014). [Research article]
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