

# J. Jose Corbalan, PhD

(Green Card holder)



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## SUMMARY

- Highly motivated, innovative, and conscientious researcher with extensive experience designing and performing *in vitro* and *in vivo* studies in cardiovascular disease.
- Interdisciplinary scientist with skills in cell biology, physiology, pharmacology, molecular biology, and biochemistry.
- Effective team member with a very strong experimental design, data analysis, data interpretation, and presentation skills. Always eager to discuss with, learn from, and teach others to successfully achieve objectives.
- Perseverant and passionate researcher with excellent written, oral, and record keeping skills.
- Accomplish and collaborative scientist with a total of 700 citations, an h-index of 11, and an i10-index of 12, according to Google Scholar (<https://scholar.google.com/citations?user=vblxaVMAAAAJ&hl=en>).

## RESEARCH SKILLS

- Cell isolation and culture, cell assays, *in vitro* disease models.
- PCR, RT-qPCR, cell transfection.
- Western blot, ELISA, enzymatic assays.
- Microscopy (e.g., fluorescence), histology.
- Rodent (mouse and rat) procedures: animal handling, dosing administration (PO, IP, IV, SQ), genotyping, tissue harvest, necropsy, blood collection, noninvasive blood pressure measurement, echocardiography, ventricular pressure-volume analysis via catheterization, clinical observation, breeding, and colony maintenance.
- Rodent disease models: myocardial ischemia/reperfusion; non-reperfused myocardial infarction; transverse aortic constriction; heart failure; high-fat diet-fed Zucker rats (an obesity-associated type 2 diabetes model); spontaneously hypertensive rats; high-fat, high-cholesterol diet-fed CETP-ApoB100 transgenic mice (an atherosclerosis model); and streptozotocin-induced diabetic rats.
- Global and cell-specific conditional knockout (KO) mice.
- Canine disease models: Chronic heart failure reduce ejection fraction (HF-rEF) induced by rapid ventricular pacing after myocardial infarction. Skills: animal training, blood sampling, drug administration, measurement and assessment of cardiovascular and hemodynamic parameters by echocardiography and left ventricular catheterization, and collection and analysis of histological samples.
- Statistical software: GraphPad Prism.
- Computer: Microsoft Office (Word, Excel, PowerPoint), ImageJ, Adobe Photoshop.

## RESEARCH EXPERIENCE

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### Research Fellow (Heart disease)

*Albert Einstein College of Medicine | Bronx, NY | Dec. 2016 to present*

- Currently studying the role of various proteins (RIPK1, LAMP2A, ATP5L) in heart disease. Actively testing pharmacological approaches to alleviate the detrimental effects of heart disease.
- Responsible for designing and performing experiments for manuscript submission and grant application. Manuscript and grant writing experience.
- Published an Editorial article in *Circulation Research* about a study by Parra *et al.* showing an underlying molecular mechanism for the already known exacerbation of I/R injury induced by deletion of RCAN1.
- Collaborated in the identification of BAX as an actionable target for doxorubicin-induced cardiomyopathy and recognition of a prototype small-molecule for therapeutic, resulting in a manuscript in *Nature Cancer*.

### Research Associate

*Rutgers-New Jersey Medical School | Newark, NJ | Aug. 2015 – Nov. 2016*

- Involved in a pilot study requested by Novartis to evaluate LCZ696 (Entresto) and valsartan in conscious instrumented dogs with chronic HF-rEF induced by rapid ventricular pacing after myocardial infarction.
- Involved in a preliminary study to measure physiological parameters of arterial stiffness by sonomicrometry in the aortas of young versus old female non-human primates.

### Visiting Research Scholar

*Ohio University | Athens, OH | Nov. 2010 – Jul. 2015*

- Worked in the laboratory of Dr. Tadeusz Malinski. Collaborated extensively with Dr. R. Preston Mason (Harvard Medical School and Elucida Research LLC, Beverly, MA).
- Currently writing an original research manuscript on the role of nitric oxide (NO) in human abdominal aortic aneurism.
- Designed and fabricated electrochemical nanosensors to measure real-time release of cytoprotective nitric oxide and cytotoxic peroxynitrite from freshly isolated tissue and cultured cells.
- Demonstrated that angiotensin II receptor blockers (olmesartan, losartan, telmisartan, and valsartan) enhance NO release from endothelial cells in a manner influenced by endothelial nitric oxide synthase (eNOS) single nucleotide polymorphisms (G894T and T-786C).
- Showed that nebivolol (a beta blocker)-stimulated generation of endothelial NO is multi-pathway and relatively slow, accounting for its beneficial effects.
- Revealed that saxagliptin (a DPP-4 inhibitor), amlodipine (a calcium channel blocker), and atorvastatin (a statin) increase aortic and glomerular endothelial NO release, with reduction in peroxynitrite levels, leading to a favorably high NO to peroxynitrite ratio. This high ratio accounts for improved endothelial cell function and vascular protection observed in hypertensive rats (hypertensive rats with diabetes, for atorvastatin) treated with these medicines.

## EDUCATION

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### PhD, Pharmaceutical Sciences

*Trinity College Dublin | Dublin, Ireland | 2014*

- Worked in the laboratories of Dr. Marek Radomski and Dr. Carlos Medina. Collaborated with the laboratory of Dr. Tadeusz Malinski (Ohio University).
- Demonstrated how a low ratio of cytoprotective nitric oxide (NO) to cytotoxic peroxynitrite triggered by amorphous silica nanoparticles initiates a series of noxious molecular events which culminates in both human endothelial cell damage and detrimental platelet activation and aggregation.

## BS, Biochemistry

University of Murcia | Murcia, Spain

### SELECTED PUBLICATIONS (<https://scholar.google.com/citations?user=vblxaVMAAAAJ&hl=en>)

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- Dulguun Amgalan, Thomas P. Garner, Ryan Pekson, Xiaotong F. Jia, Mounica Yanamandala, Victor Paulino, Felix G. Liang, **J. Jose Corbalan**, et al. A small-molecule allosteric inhibitor of BAX protects against doxorubicin-induced cardiomyopathy. *Nature Cancer*. 2020; 1(3):315-328.
- **J. Jose Corbalan**, et al. RCAN1 – Calcineurin Axis and the Set-Point for Myocardial Damage During Ischemia-Reperfusion. *Circulation Research*. 2018; 122(6): 796-798.
- R. Preston Mason, **J. Jose Corbalan**, Robert F. Jacob, Hazem Dawoud, and Tadeusz Malinski. Atorvastatin Enhanced Nitric Oxide Release and Reduced Blood Pressure, Nitroxidative Stress and RANTES Levels in Hypertensive Rats with Diabetes. *Journal of Physiology and Pharmacology*. 2015; 66(1).
- R. Preston Mason, Robert F. Jacob, **J. Jose Corbalan**, Damian Szczesny, Kinga Matysiak, and Tadeusz Malinski. The favorable kinetics and balance of nebivolol-stimulated nitric oxide and peroxynitrite release in human endothelial cells. *BMC Pharmacology and Toxicology*. 2013; 14(1):48.
- **J. Jose Corbalan**, Carlos Medina, Adam Jacoby, Tadeusz Malinski, and Marek W. Radomski. Amorphous silica nanoparticles trigger nitric oxide/peroxynitrite imbalance in human endothelial cells: inflammatory and cytotoxic effects. *International Journal of Nanomedicine*. 2011; 6: 2821-2835.

### SELECTED PUBLISHED CONFERENCE PROCEEDINGS

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- R. Preston Mason, Robert F. Jacob, **J. Jose Corbalan**, and Tadeusz Malinski. Eicosapentaenoic acid reduces small dense low-density lipoprotein oxidation and improves endothelial function *in vitro* as compared to other triglyceride-lowering agents. *Journal of the American College of Cardiology*. 2015; 65(10 Supplement):A2139.
- R. Preston Mason, Robert F. Jacob, **J. Jose Corbalan**, and Tadeusz Malinski. Saxagliptin reduces lesion formation and reduces endothelial dysfunction in CEPT-ApoB100 mice with atherosclerosis. *Circulation*. 2013; 128 (Suppl. 22):A15118.
- R. Preston Mason, Robert F. Jacob, **J. Jose Corbalan**, Lu-Lin Jiang, and Tadeusz Malinski. Saxagliptin treatment enhances eNOS function and expression while reducing nitroxidative stress in aortic and glomerular endothelia of obese Zucker rats. *Diabetes*. 2013; 62: A114-A115.

### PEER REVIEW RECORD

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*Journal of Cardiovascular Pharmacology, Oxidative Medicine and Cellular Longevity, Mediators of Inflammation, Cell Physiology and Biochemistry, American Heart Association Scientific Sessions, and International Journal of Nanomedicine.*

### PROFESSIONAL MEMBERSHIPS

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Member of the American Heart Association: Council on Basic Cardiovascular Sciences.