Yassine Sassi
Curriculum vitae

Contact:
The Fralin Biomedical Research Institute
Center for Heart and Reparative Medicine Research,
Virginia Tech Carilion,
4 Riverside Circle, Roanoke, Virginia, VA 24016 USA
E-mail: sassiy@vt.edu

Education:

2002-2003	*Degree*: BSc. *Field of study*: Biochemistry. *Institution*: Pierre et Marie Curie University, Paris, France.
2003-2005	*Degree*: MSc. *Field of study*: Clinical Pharmacology. *Institution*: Pierre et Marie Curie University, Paris, France. Mentor: Professor Philippe Lechat
2005-2010	*Degree*: PhD. *Field of study*: Cardiovascular Physiology. *Institution*: Pierre et Marie Curie University, Paris, France. Mentors: Drs. Anne-Marie Lompre and Jean-Sebastien Hulot

Appointments:

2010-2015	Postdoctoral Fellow, Institut für Pharmakologie und Toxikologie der Technischen Universität München, Munich, Germany
2016	Postdoctoral Fellow, Cardiovascular Research Center, Department of Medicine, Icahn School of Medicine at Mount Sinai, New York, NY
2017-2018	Instructor of Medicine, Cardiology, Icahn School of Medicine at Mount Sinai, New York, NY
2019-2021	Assistant Professor of Medicine, Cardiology, Icahn School of Medicine at Mount Sinai, New York, NY
2021	Assistant Professor, Fralin Biomedical Research Institute at Virginia Tech Carilion
2021	Assistant Professor, Department of Biomedical Sciences and Pathobiology, College of Veterinary Medicine, Virginia Tech

Honors/Awards:

2005	PhD Fellowship from the French Ministère de l'Education Nationale et de la Recherche Scientifique.
2007	Poster Prize (1st place), French Society of Cardiovascular Research, annual meeting, Tours, France.
2008	PhD Fellowship from the Foundation of Medical Research (FRM), France.
2009	Prize for the best PhD thesis (1st place), French Society of Pharmacology, Physiology and Therapeutics, France.
2009	"Young Investigator Award in Basic Sciences" (1st place), International Society of Heart Research (ISHR).
2010	Postdoctoral Fellowship from the Bayerische Forschungsstiftung, Germany, 2010.

2011 "Young Investigator Award", European Society of Cardiology, Heart Failure Association winter research meeting, Les Diablerets, Switzerland.

2013 Best Poster Award (1st place), 11th Dutch-German Joint Meeting of Molecular Cardiology Working Groups, Heidelberg, Germany.

2014 "Early Career Best Science Award Winner" (1st place), American Heart Association Scientific sessions, Chicago, USA.

2017 Career Development Award, American Heart Association

2018 Innovative Project Award, American Heart Association

2021 Transformational Project Award, American Heart Association

Patents:

2008 Inhibitors of MRP4 for the treatment of vascular disorders (Patent No.: US8,354,388 B2). Role: Inventor.

2009 Inhibitors of MRP4 and agents stimulating MRP4 activity for the treatment of cardiac disorders (Patent No.: US8,420,594 B2). Role: Inventor.

2018 Treatment of pulmonary fibrosis with SERCA2a Gene Therapy. Role: Inventor.

2019 Inhibition of microRNA-224 to treat Pulmonary Hypertension. (Patent No.: US 62/941,608). Role: Inventor.

Other professional roles:

2014-Present Reviewer for the following journals: Journal of the American College of Cardiology, Circulation, Circulation Research, Scientific reports, Experimental and Molecular Medicine, Biomolecules, International Journal of Molecular Sciences, MDPI-Diseases, MDPI-Pharmaceutics, …

Research profile:

My specific research areas are focused on cardiopulmonary physiopathology and new approaches for treating heart failure, myocardial fibrosis, pulmonary arterial hypertension and pulmonary fibrosis.

One of my research interests focuses on investigating the intercellular signaling between cells in the myocardium and in the lung. In the last decade, I have been exploring the mechanisms of cyclic nucleotides transport in the cardiovascular system. Our work demonstrated that cAMP extrusion via a transporter (i.e. Abcc4), acts together with phosphodiesterases to control cAMP levels in vascular smooth muscle cells and in cardiac myocytes. Our work revealed the presence of a protective extracellular cAMP pathway in the heart and a paracrine role for secreted cAMP in intercellular signaling between cardiac fibroblasts and myocytes in the myocardium. In addition, we recently reported the presence of an extracellular cAMP pathway in pulmonary arteries that attempts to protect the lung during PAH. Our work revealed that lung fibroblasts are the primary human pulmonary source of secreted cAMP and that extracellular cAMP inhibits pulmonary artery smooth muscle cells and endothelial cells growth *in vitro* and reverses pulmonary and cardiac remodeling associated with pulmonary hypertension *in vivo*. Our recent study demonstrated that targeting the extracellular cAMP pathway is a useful strategy to prevent and treat pulmonary hypertension.

I also have an interest in characterizing the role of different microRNAs in cardiovascular remodeling. Our previous work revealed that cardiomyocyte specific manipulation of miR-29 promotes both, cardiac hypertrophy and fibrosis, and that this dominates over the reported anti-fibrotic effects of miR-29 in non-myocytes. We also identified miR-378 as a regulator of cardiomyocyte hypertrophy, and we reported that restoration of disease-associated loss of miR-

378 to be an effective therapeutic strategy in myocardial disease. My team is currently assessing the role of several microRNAs in the pathogenesis of pulmonary arterial hypertension. MiRNAs are likely candidates as critical regulators of vascular remodeling in pulmonary arterial hypertension and our studies might lead to novel therapeutic strategies for the treatment of pulmonary hypertension. We identified several microRNAs to be regulated in patients with pulmonary arterial hypertension and in experimental pulmonary hypertension. In addition, using two different approaches (chemically modified antisense oligonucleotide and a new approach to manipulate miRNA expression via the generation of Tough Decoy (TuD) RNA), we found the inhibition of two different miRNAs to block human pulmonary artery smooth muscle cells proliferation *in vitro* and to reverse pulmonary arterial hypertension in mice and rats *in vivo*.

Whereas considerable efforts are made in studying the pathophysiological effects of endogenously expressed coding and non-coding RNAs in the cardiovascular system, my group is currently investigating the role of exogenous miRNAs on cardiac function. In recent years, studies have revealed that bovine milk contains miRNAs that are encapsulated in extracellular vesicles (EVs). Feeding a diet depleted of bovine milk exosomes causes a more than 60% decrease in human plasma microRNAs compared with controls. MiRNAs are absorbed in biologically meaningful amounts from nutritionally relevant doses of bovine milk and affect gene expression in peripheral blood mononuclear cells, HEK-293 kidney cell cultures, and mouse livers. My group confirmed the myocardial and pulmonary bioavailability of bovine milk-derived miRNAs and we are currently defining their physiological consequences in cardiovascular diseases (CVD). Defining the presence and the mechanisms of milk-derived miRNAs in the cardiovascular system and their physiological consequences will be of great relevance in the analysis of CVD.

The direction of my current research is based mainly on the use of target proteins, cyclic nucleotides pathways, endogenous non-coding RNAs, and exogenous non-coding RNAs, to test new therapeutic approaches for cardiovascular and pulmonary diseases. I am applying my expertise in cAMP homeostasis, coding and non coding RNAs to investigate their therapeutic roles in cardiac hypertrophy, myocardial fibrosis, pulmonary arterial hypertension and pulmonary fibrosis.

Extramural Grants:

Current grants

List Funding Source, Project Title & Number	Role in Project	Dates	Direct Costs
NIH/NHLBI (K01) The role of extracellular cAMP in the pathogenesis of pulmonary arterial hypertension K01HL135474	Principal Investigator	03/20/2018 - 02/28/2023	$170,640 per year
AHA (Transformational Project Award) A MicroRNA-Based Therapeutic Approach for Pulmonary Arterial Hypertension 20TPA35520000	Principal Investigator	01/01/2021 - 12/31/2023	$90,909 per year

Past grants

List Funding Source, Project Title & Number	Role in Project	Dates	Direct Costs
AHA (Innovative project award) Myocardial activities of extracellular vesicles-derived miRNAs from Bovine Milk 18IPA34170258	Principal Investigator	07/01/2018 - 09/31/2020	$90,909 per year
AHA (Innovative project award) Extracellular vesicles secreted by human Induced Pluripotent Stem Cells (iPSC)-derived vascular cells as novel biomarker and treatment of Pulmonary Arterial Hypertension Disease 18IPA34170321	Co-Investigator	07/01/2018 - 09/31/2020	$90,909 per year
AHA (Scientist Development grant) Cyclic nucleotides in Pulmonary Arterial Hypertension 17SDG33370112	Principal Investigator	01/01/2017 - 12/31/2019	$77,000 per year
T32 NIH/NHLBI Training Program in Molecular and Cellular Cardiology	Post-doctoral Fellow (PIs: Hajjar/Gelb)	01/01/2017 - 03/19/2018	N/A
Start-up-Grants Source: DZHK, Germany	Principal Investigator	01/10/2014 - 09/30/2015	$70,000 per year

Trainees:

Name	**Level of Trainee**	**Role in Training & Inclusive Dates of Training**	**Training Venue**	**Trainees' Current Status/Employment**
Ute Greczmiel	Bachelor student	Supervisor August-September 2010	Technischen Universität München, Germany	Postdoc

Vera Zywitza	Bachelor student	Supervisor May-June 2011	Technischen Universität München, Germany	Postdoc
Tom Schwarzer	Bachelor student	Supervisor-April-July 2010	Technischen Universität München, Germany	Postdoc
Jeffery Truong	Bachelor student	Supervisor April-October 2011	Technischen Universität München, Germany	Postdoc
Eva Sum	Bachelor student	Supervisor August-September 2012	Technischen Universität München, Germany	Postdoc
Sarah Hölscher	Master Student	Supervisor March-December 2012	Technischen Universität München, Germany	PhD student
Cornelia Bronner	Master Student	Supervisor April-November 2012	Technischen Universität München, Germany	Postdoc
Sabine Richter	Bachelor Student	Supervisor May-July 2013	Technischen Universität München, Germany	PhD student
Melanie Meir	Bachelor student	Supervisor August-September 2013	Technischen Universität München, Germany	PhD student
Laurenz Gruter	MD Student	Supervisor March 2013-April 2014	Technischen Universität München, Germany	MD, PhD
Anna Nager	Bachelor student	Supervisor March 2014-June 2014	Technischen Universität München, Germany	Master student
Andreas-David Brunner	Bachelor student	Supervisor March 2014-June 2014	Technischen Universität München, Germany	Master student
Melanie Meir	Master student	Supervisor October 2014-March 2015	Technischen Universität München, Germany	PhD student
Daniela Kalla	Bachelor student	Supervisor March 2015-June 2015	Technischen Universität München, Germany	PhD student
Olympia Bikou	MD student	Supervisor 2012-2015	Technischen Universität München,	Postdoc

			Germany	
Guillaume Bonnet	MD student	Supervisor November 2015-October 2016	Icahn School of Medicine at Mount Sinai, NY, USA	MD
Antonio Lax	Postdoc	Supervisor July 2016-December 2016	Icahn School of Medicine at Mount Sinai, NY, USA	PI
Carly Jones	Master Student	Supervisor October 2017-July 2019	Icahn School of Medicine at Mount Sinai, NY, USA	Associate at Prescient Healthcare Group
Michael Kirschner	High School Student	Supervisor January 2018-May 2018	Icahn School of Medicine at Mount Sinai, NY, USA	High School Student
Olympia Bikou	Postdoc	Supervisor December 2017-September 2020	Icahn School of Medicine at Mount Sinai, NY, USA	Postdoc
Grace Rabinowitz	High School Student	Supervisor July 2018-August 2018	Icahn School of Medicine at Mount Sinai, NY, USA	High School Student
Tomas Grossmark	High School Student	Supervisor July 2018-August 2018	Icahn School of Medicine at Mount Sinai, NY, USA	High School Student
Emerson Obus	Bachelor student/Research Assistant	Supervisor October 2018-Present	Icahn School of Medicine at Mount Sinai, NY, USA	Research Assistant
Nestor Bedoya	Master Student	Supervisor September 2018-Present	Icahn School of Medicine at Mount Sinai, NY, USA	MD Student
Catherine Swarts	Master Student	Supervisor September 2019-Present	Icahn School of Medicine at Mount Sinai, NY, USA	Master Student
Eric Mensah	Master Student	Supervisor September 2019-Present	Icahn School of Medicine at Mount Sinai, NY, USA	Master Student

Teaching activities:

Teaching Activity/Topic	Level	Role	Venue	Hours/year	Years Taught
Biology of Plants and Animals	Bachelor of sciences	Teacher	Pierre et Marie Curie University, Paris, France	64 hours per year	2005-2009
Cardiac arrhythmia	Master of Life Sciences	Invited lecturer	Technischen Universität München (TUM), Germany	12 hours per year	2014-2015

Publications:

Peer Reviewed Original Contributions:

1. **Sassi Y**, Lipskaia L, Vandecasteele G, Nikolaev VO, Hatem SN, Cohen Aubart F, Russel FG, Mougenot N, Vrignaud C, Lechat P, Lompré AM, Hulot JS. Multidrug resistance-associated protein 4 regulates cAMP-dependent signaling pathways and controls human and rat SMC proliferation. J Clin Invest. 2008 Aug;118(8):2747-57. PMID: 18636120

2. Aubart FC, **Sassi Y**, Coulombe A, Mougenot N, Vrignaud C, Leprince P, Lechat P, Lompré AM, Hulot JS. RNA interference targeting Stim1 suppresses vascular smooth muscle cell proliferation and neointima formation in the rat. Mol Ther. 2009 Mar;17(3):455-62. PMID: 19107116

3. Bobe R, Hadri L, Lopez JJ, **Sassi Y**, Atassi F, Karakikes I, Liang L, Limon I, Lompré AM, Hatem SN, Hajjar RJ, Lipskaia L. SERCA2a controls the mode of agonist-induced intracellular Ca2+ signal, transcription factor NFAT and proliferation in human vascular smooth muscle cells. J Mol Cell Cardiol. 2011 Apr;50(4):621-33. PMID: 21195084

4. Hara Y, **Sassi Y**, Guibert C, Gambaryan N, Dorfmüller P, Eddahibi S, Lompré AM, Humbert M, Hulot JS. Inhibition of MRP4 prevents and reverses pulmonary hypertension in mice. J Clin Invest. 2011 Jul;121(7):2888-97. PMID: 21670499

5. Fauconnier J, Meli AC, Thireau J, Roberge S, Shan J, **Sassi Y**, Reiken SR, Rauzier JM, Marchand A, Chauvier D, Cassan C, Crozier C, Bideaux P, Lompré AM, Jacotot E, Marks AR, Lacampagne A. Ryanodine receptor leak mediated by caspase-8 activation leads to left ventricular injury after myocardial ischemia-reperfusion. Proc Natl Acad Sci U S A. 2011 Aug 9;108(32):13258-63. PMID: 21788490

6. Jentzsch C, Leierseder S, Loyer X, Flohrschütz I, **Sassi Y**, Hartmann D, Thum T, Laggerbauer B, Engelhardt S. A phenotypic screen to identify hypertrophy-modulating microRNAs in primary cardiomyocytes. J Mol Cell Cardiol. 2012 Jan;52(1):13-20. PMID: 21801730

7. Hulot JS, Fauconnier J, Ramanujam D, Chaanine A, Aubart F, **Sassi Y**, Merkle S, Cazorla O, Ouillé A, Dupuis M, Hadri L, Jeong D, Mühlstedt S, Schmitt J, Braun A, Bénard L, Saliba Y, Laggerbauer B, Nieswandt B, Lacampagne A, Hajjar RJ, Lompré AM, Engelhardt S. Critical role for stromal interaction molecule 1 in cardiac hypertrophy. Circulation. 2011 Aug 16;124(7):796-805. PMID: 21810664

8. **Sassi Y**, Abi-Gerges A, Fauconnier J, Mougenot N, Reiken S, Haghighi K, Kranias EG, Marks AR, Lacampagne A, Engelhardt S, Hatem SN, Lompre AM, Hulot JS. Regulation of cAMP homeostasis by the efflux protein MRP4 in cardiac myocytes. FASEB J. 2012 Mar;26(3):1009-17. PMID: 22090316

9. Cheepala S, Hulot JS, Morgan JA, **Sassi Y**, Zhang W, Naren AP, Schuetz JD. Cyclic nucleotide compartmentalization: contributions of phosphodiesterases and ATP-binding cassette transporters. Annu Rev Pharmacol Toxicol. 2013; 53:231-53. PMID: 23072381

10. Ganesan J, Ramanujam D, **Sassi Y**, Ahles A, Jentzsch C, Werfel S, Leierseder S, Loyer X, Giacca M, Zentilin L, Thum T, Laggerbauer B, Engelhardt S. MiR-378 controls cardiac hypertrophy by combined repression of mitogen-activated protein kinase pathway factors. Circulation. 2013 May 28;127(21):2097-106. PMID: 23625957

11. Gurha P, Wang T, Larimore AH, **Sassi Y**, Abreu-Goodger C, Ramirez MO, Reddy AK, Engelhardt S, Taffet GE, Wehrens XH, Entman ML, Rodriguez A. microRNA-22 promotes

heart failure through coordinate suppression of PPAR/ERR-nuclear hormone receptor transcription. PLoS One. 2013 Sep 27;8(9):e75882. PMID: 24086656

12. **Sassi Y**, Ahles A, Truong DJF, Hulot JS, Baqi Y, Müller C, Husse B, Dendorfer A, Laggerbauer B, Engelhardt S. Cardiac myocyte-secreted cAMP exerts paracrine action via adenosine receptor activation. J Clin Invest. 2014 Dec;124(12):5385-97. PMID: 25401477

13. Polesskaya A, Pinna G, **Sassi Y**, Vandamme M, Bigot A, Mouly V, Morozova N, Harel-Bellan A, Degerny C. Post-transcriptional modulation of interleukin 8 by CNOT6L regulates skeletal muscle differentiation. Biochim Biophys Acta. 2016 Feb;1863(2):263-70. PMID: 26608607

14. Belleville-Rolland T, **Sassi Y**, Decouture B, Dreano E, Hulot JS, Gaussem P, Bachelot-Loza C. MRP4 (ABCC4) as a potential pharmacologic target for cardiovascular disease. Pharmacol Res. 2016 May; 107:381-389. PMID: 27063943

15. Ramanujam D, **Sassi Y**, Laggerbauer B, Engelhardt S. Viral Vector-Based Targeting of miR-21 in Cardiac Nonmyocyte Cells Reduces Pathologic Remodeling of the Heart. Mol Ther. 2016 Nov;24(11):1939-1948. PMID: 27545313

16. **Sassi Y**, Avramopoulos P, Ramanujam D, Grüter L, Werfel S, Giosele S, Brunner AD, Esfandyari D, Papadopoulou AS, De Strooper B, Hübner N, Kumarswamy R, Thum T, Yin X, Mayr M, Laggerbauer B, Engelhardt S. Cardiac myocyte miR-29 promotes pathological remodeling of the heart by activating Wnt signaling. Nat Commun. 2017 Nov 20;8(1):1614. PMID: 29158499

17. Rodriguez P, **Sassi Y**, Troncone L, Benard L, Ishikawa K, Gordon RE, Lamas S, Laborda J, Hajjar RJ, Lebeche D. Deletion of delta-like 1 homologue accelerates fibroblast-myofibroblast differentiation and induces myocardial fibrosis. Eur Heart J. 2018 Apr 13. PMID: 29668883

18. Asensio-Lopez MDC, Lax A, Fernandez Del Palacio MJ, **Sassi Y**, Hajjar RJ, Pascual-Figal DA. Pharmacological inhibition of the mitochondrial NADPH oxidase 4/PKC/Gal-3 pathway reduces left ventricular fibrosis following myocardial infarction. Transl Res. 2018 Apr 23. PMID: 29753686

19. Bueno-Beti C, **Sassi Y**, Hajjar RJ, Hadri L. Pulmonary Artery Hypertension Model in Rats by Monocrotaline Administration. Methods Mol Biol. 2018; 1816:233-241. PMID: 29987824

20. Mathiyalagan P, Adamiak M, Mayourian J, **Sassi Y**, Liang Y, Agarwal N, Jha D, Zhang S, Kohlbrenner E, Chepurko E, Chen J, Trivieri MG, Singh R, Bouchareb R, Fish K, Ishikawa K, Lebeche D, Hajjar RJ, Sahoo S. FTO-Dependent m6A Regulates Cardiac Function During Remodeling and Repair. Circulation. 2018 Jul 11. PMID: 29997116

21. Katz MG, Fargnoli AS, **Sassi Y**, Hajjar RJ, Hadri L. Direct measurement of left atrial and pulmonary artery pressure in rats with pulmonary hypertension. J Thorac Cardiovasc Surg. 2018 Sep;156(3):1161-1163. PMID: 30119283

22. Strauss B, **Sassi Y**, Bueno-Beti C, Ilkan Z, Raad N, Cacheux M, Bisserier M, Turnbull IC, Kohlbrenner E, Hajjar RJ, Hadri L, Akar FG. Intra-tracheal gene delivery of aerosolized SERCA2a to the lung suppresses ventricular arrhythmias in a model of pulmonary arterial hypertension. J Mol Cell Cardiol. 2018 Nov 28; 127:20-30. PMID: 30502350.

23. Katz MG, Fargnoli AS, Gubara SM, Bisserier M, **Sassi Y**, Bridges CR, Hajjar RJ, Hadri L. The Left Pneumonectomy Combined with Monocrotaline or Sugen as a Model of Pulmonary Hypertension in Rats. J Vis Exp. 2019 Mar 8;(145). doi: 10.3791/59050.

24. Asensio-Lopez MC, Lax A, Fernandez Del Palacio MJ, **Sassi Y**, Hajjar RJ, Januzzi JL, Bayes-Genis A, Pascual-Figal DA. Yin-Yang 1 transcription factor modulates ST2 expression during adverse cardiac remodeling post-myocardial infarction. J Mol Cell Cardiol. 2019 May;130:216-233.

25. Jones C, Bisserier M, Bueno-Beti C, Bonnet G, Neves-Zaph S, Lee SY, Milara J, Dorfmüller P, Humbert M, Leopold JA, Hadri L, Hajjar RJ, **Sassi Y**. A novel secreted-cAMP pathway inhibits pulmonary hypertension via a feed-forward mechanism**.** Cardiovasc Res. 2019 Sep 14.

26. Bikou O, Tharakan S, Yamada KP, Kariya T, Gordon A, Miyashita S, Watanabe S, **Sassi Y**, Fish K, Ishikawa K. A Novel Large Animal Model of Thrombogenic Coronary Microembolization. Front Cardiovasc Med. 2019 Nov 5;6:157.

27. Bisserier M, Milara J, Gubara S, Jones C, Bueno-Beti C, Chepurko E, Kohlbrenner E, Katz MG, Fargnoli A, Leopold J, Hajjar RJ, **Sassi Y**, Hadri L. Targeting molecular mechanisms in experimental and human pulmonary fibrosis. Molecular Therapy. 2020. Feb 5;28(2):394-410.

28. Magadum A, Singh N, Kurian AA, Munir I, Mehmood T, Brown K, Sharkar MTK, Chepurko E, **Sassi Y**, Oh JG, Lee P, Santos CXC, Gaziel-Sovran A, Zhang G, Cai CL, Kho C, Mayr M, Shah AM, Hajjar RJ, Zangi L. Pkm2 Regulates Cardiomyocyte Cell Cycle and Promotes Cardiac Regeneration. Circulation. 2020 Apr 14;141(15):1249-1265

29. Bikou O, Hadri L, Hajjar RJ, **Sassi Y**. Induction and characterization of pulmonary hypertension in mice using the Hypoxia/Sugen model. J Vis Exp. 2020 Jun 3;(160).

30. Bouchareb R, Katz M, Saadallah N, **Sassi Y**, Ali S, Lebeche D. Boron improves cardiac contractility and fibrotic remodeling following myocardial infarction injury. Scientific Reports. 2020 Oct 13;10(1):17138.

31. Magadum A, Kurian AA, Chepurko E, **Sassi Y**, Hajjar RJ, Zangi L. SMRTs: Specific modified mRNA Translation system. Circulation. 2020 Dec 22;142(25):2485-2488

32. Asensio-Lopez MC, **Sassi Y**, Soler F, Fernandez Del Palacio MJ, Pascual-Figal D, Lax A. The miRNA199a/SIRT1/P300/Yy1/sST2 signaling axis regulates adverse cardiac remodeling following MI. Scientific Reports. 2021 Feb 16;11(1):3915

Submitted Articles:

1. Strauss B, Obus E, Fargnoli A, Katz MG, Cacheux M, Akar JG, Hummel JP, **Sassi Y***, Akar FG***.** Selective right-sided electrical remodeling in a pure model of pulmonary hypertension promotes micro-reentrant arrhythmias. In revision.

2. Bisserier M, Mathiyalagan P, Zhang S, Elmastour F, Dorfmuller P, Humbert M, David G, Weber T, Perros F, Sahoo S, **Sassi Y**, Hadri L. Regulation of BMPR2 Methylation and Expression by SIN3a as a Novel Therapeutic Mechanism in Pulmonary Arterial Hypertension. Circulation. In press.

Invited Contributions:

1. **Sassi Y**, Hara Y, Lompre AM, Hulot JS. Multi-drug Resistance Protein 4 (MRP4/ABCC4) and cyclic nucleotides signaling pathways. *Cell Cycle*, 2009; 8(7):962-3.

2. Engelhardt S, **Sassi Y**. MicroRNA Augmentation of Bone Marrow-Derived Cell Therapy. J Am Coll Cardiol. 2015 Nov 17;66(20):2227-9.

Books and Book Chapters:

1. **Sassi Y**, Hulot JS. Pulmonary Hypertension: Novel Pathways and Emerging Therapies Inhibitors of cGMP and cAMP Metabolism. *Handb Exp Pharmacol*. 2013; 218:513-29.

2. Bueno-Beti C, Hadri L, Hajjar RJ, **Sassi Y**. The Sugen 5416/Hypoxia Mouse Model of Pulmonary Arterial Hypertension. Methods Mol Biol. 2018; 1816:243-252. PMID: 29987825.

Invited lectures/Presentations:

1. Fondation Leducq, meeting, Paris, France, March 30-31 2009. Presentation: MRP4 acts as a regulator of cAMP-dependent signalling pathways.

2. European Society of Cardiology Congress, Stockholm - Sweden, Aug 28-Sep 01, 2010. Presentation: The efflux protein MRP4 controls cAMP homeostasis in cardiac myocytes.

3. "Cyclic AMP association" annual meeting, Paris, France, June 2013. Lecture: Paracrine actions of cAMP secreted from cardiomyocytes.

4. Fondation Leducq meeting, Dallas, USA, Nov. 14-15, 2013. Lecture: Role of miR-29 in cardiac remodeling.

5. Dutch-German Joint meeting of the Molecular Cardiology Working Groups. Groningen, Netherlands, March 20, 2014. The efflux protein MRP4 controls cAMP homeostasis in cardiac myocytes.

6. German Cardiac Society annual meeting, Mannheim, Germany, April 23-26, 2014. Presentation: Paracrine action of the intracellular second messenger cAMP secreted from cardiac myocytes.

7. Cardiology department, Mount Sinai, New York, USA, Nov. 2014. Presentation: Role of miR-29 in cardiac remodeling.

8. European Society of Cardiology, Frontiers in Cardiovascular Biology 2014, Barcelona - Spain, 4-6 July 2014. Presentation: Paracrine action of the intracellular second messenger cAMP secreted from cardiac myocytes.

9. German Cardiac Society annual meeting, Mannheim, Germany, April 8-11, 2015. Presentation: Inhibition of the miR-29 family in cardiac myocytes prevents cardiac remodeling.

10. Cyclic Nucleotide Phosphodiesterases Gordon Research conference, Girona, Spain, June 12-16, 2016. Presentation: Paracrine role of secreted cAMP.

11. Division of Infectious Diseases, Department of Medicine, Mount Sinai, New York, USA, Jan. 2019. Presentation: A novel secreted-cAMP pathway inhibits pulmonary hypertension via a feed-forward mechanism.

12. Division of Pulmonary, Critical Care and Sleep Medicine, Mount Sinai, New York, USA, April 2019. Presentation: MicroRNAs as a novel therapeutic strategy for pulmonary arterial hypertension.

Voluntary presentations:

1. French society of Pharmacology, (SFP), annual meeting, Toulouse, France April 11-13 2007. Oral communication: Blocking the nucleotide transporter MRP4 as a new target to inhibit proliferation of arterial smooth muscle cells.

2. French society of Cardiovascular Research (GRRC; Groupe de Réflexion sur la Recherche Cardiovasculaire), annual meeting, Tours, April 25-27 2007. Oral communication: Blocking the nucleotide transporter MRP4 as a new target to inhibit proliferation of arterial smooth muscle cells.

3. Fondation Leducq, meeting, New-York, USA, November 7-8 2007. Poster: MRP4 is a transmembrane export pump acting as an endogenous regulator of cyclic-nucleotides dependent pathways.

4. ABC 2008 (ATP-Binding Cassette Transporters Proteins), Innsbruck, Austria, March 1-8 2008. Oral communication: MRP4 acts as a regulator of cAMP-dependent signalling pathways and controls smooth muscle cell proliferation.

5. IFR14 (Institut Fédératif de Recherche), Paris, France, March 13 2008. Oral communication: MRP4 acts as a regulator of cAMP-dependent signalling pathways and controls smooth muscle cell proliferation.

6. French society of Pharmacology (SFP), Clermont-Ferrand, France April 9-11 2008. Oral communication: MRP4 acts as a regulator of cAMP-dependent signalling pathways and controls smooth muscle cell proliferation.

7. French society of Cardiovascular Research (GRRC), Montpellier, France, May 28-31 2008. Oral communication: Blocking the nucleotide transporter MRP4 as a new target to inhibit proliferation of arterial smooth muscle cells.

8. 53rd Biophysical Society Annual Meeting, Boston, USA, February 28-March 4 2009. Poster: Blocking the nucleotide transporter MRP4 as a new target to inhibit proliferation of arterial smooth muscle cells.

9. Fondation Leducq, meeting, Paris, France, March 30-31 2009. Oral communication: MRP4 acts as a regulator of cAMP-dependent signalling pathways.

10. French society of Cardiovascular Research (GRRC), Nancy, France, April 2-3 2009. Oral communication: Inhibition of the multidrug resistance-associated protein 4 (MRP4) promotes cardiac hypertrophy.

11. French society of Pharmacology, physiology and therapeutics (P2T), Marseille, France April 15-17 2009. Oral communication: Extrusion by the multidrug resistance-associated protein 4, MRP4, as a new mechanism of control of the cyclic nucleotides level and of regulation of vascular and cardiac functions.

12. Heart Failure 2009 and ISHR (International Society of Heart Research), Nice, France, 30 May - 02 Jun 2009. Oral communication: The efflux protein MRP4 controls cAMP homeostasis in cardiac myocytes.

13. Fondation Leducq, meeting, Hammamet, Tunisia, September 30-31 2009. Oral communication: The efflux protein MRP4 controls cAMP homeostasis in cardiac myocytes.

14. American Heart Association meeting, Orlando, US, November 14-18 2009. Oral communication: The efflux protein MRP4 controls cAMP homeostasis in cardiac myocytes.

15. European Society of Cardiology Congress, Stockholm - Sweden, 28 Aug 2010 - 01 Sep 2010. Oral communication: The efflux protein MRP4 controls cAMP homeostasis in cardiac myocytes.

16. Heart Failure Association Winter Research Meeting, Les Diablerets, Switzerland, January 26-29 2011. Poster: The efflux protein MRP4 controls cAMP homeostasis in cardiac myocyte.

17. Deutsche Gesellschaft für experimentelle und klinische Pharmakologie und Toxikologie, annual meeting, Halle, Germany, March. 5-7, 2013. Oral communication: Paracrine actions of the intracellular second messenger cAMP secreted from cardiac myocytes.

18. German Cardiac Society annual meeting, Mannheim, Germany, April 3-6, 2013. Oral communication: Myocyte-fibroblast crosstalk in the myocardium.

19. German Cardiac Society annual meeting, Mannheim, Germany, April 3-6, 2013. Oral communication: Paracrine actions of cAMP secreted from cardiomyocytes.

20. Fondation Leducq meeting, Dallas, USA, Nov. 14-15, 2013. Oral communication: Role of miR-29 in cardiac remodeling.

21. American Heart Association meeting, Dallas, USA, Nov. 16-20, 2013. Oral communication: Paracrine action of the intracellular second messenger cAMP secreted from cardiac myocytes.

22. German Cardiac Society annual meeting, Mannheim, Germany, April 23-26, 2014. Oral communication: Paracrine action of the intracellular second messenger cAMP secreted from cardiac myocytes.

23. European Society of Cardiology, Frontiers in Cardiovascular Biology 2014, Barcelona - Spain, 4-6 July 2014. Oral communication: Oral communication: Paracrine action of the intracellular second messenger cAMP secreted from cardiac myocytes.

24. American Heart Association meeting, Chicago, USA, Nov. 15-19, 2014. Poster: cAMP-mediated cardiac myocyte-fibroblast crosstalk.

25. German Society for Experimental and Clinical Pharmacology and Toxicology, 81st Annual Meeting, Kiel, Germany, March 10-12, 2015. Oral communication: Inhibition of the miR-29 family in cardiac myocytes prevents cardiac remodeling.

26. French society of Cardiovascular Research (GRRC), Printemps de la Cardiologie 2015, Toulouse, France, April 2-3 2015. Poster: Paracrine action of the intracellular second messenger cAMP secreted from cardiac myocytes.

27. French society of Cardiovascular Research (GRRC), Printemps de la Cardiologie 2015, Toulouse, France, April 2-3 2015. Poster: Inhibition of the miR-29 family in cardiac myocytes prevents cardiac remodelling.

28. German Cardiac Society annual meeting, Mannheim, Germany, April 8-11, 2015. Oral communication: Inhibition of the miR-29 family in cardiac myocytes prevents cardiac remodeling.

29. Arteriosclerosis, Thrombosis and Vascular Biology Scientific Session, May 10-12, 2018. Poster: Extracellular cAMP as a novel therapeutic strategy in pulmonary arterial hypertension.

30. Basic Cardiovascular Sciences Scientific Sessions AHA, San Antonio, Texas, July 30-August 2, 2018. Poster: The role of extracellular cAMP in the pathogenesis of pulmonary arterial hypertension.