



### Rita Maalouf

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## Biography

Dr. Maalouf received her doctorate degree in Analytical Sciences from Claude Bernard University, Lyon, France in 2006, after which she joined the Department of Medicine/Cardiology at the University of Texas Health Science Center at San Antonio as postdoctoral fellow. Following an academic career in France and the United States, she was appointed as Assistant Professor at the Faculty of Natural and Applied Sciences in the Chemistry program in 2011, and was then promoted to the rank of Associate Professor in 2017. Dr. Maalouf main research interests lie in the development of nanoparticles as well as the conception and design of (bio)chemical sensors for biomedical or environmental applications. She is a peer-reviewer for several journals. Dr. Maalouf has been granted several awards among which the Junior Investigator Award for Women granted by the American Heart Association.

## Peer-reviewed Journals

- J. Matta, R. Maalouf. Delivery of siRNA therapeutics: PLGA nanoparticles approach. *Frontiers in Bioscience (Schol Ed)*. 1(11):56-74, 2019.
- A. Jonderian, R. Maalouf. Formulation and in vitro interaction of rhodamine-B loaded PLGA nanoparticles with cardiac myocytes. *Frontiers in Pharmacology*.7:458, 2016.
- R. Dib, K. Makhoul, R. Maalouf. Preliminary bioactivity investigation of Styra Officinalis fruit extract as potential biopesticide. *Journal of Pharmacognosy and Phytotherapy*. 8(12):209-213, 2016.
- S. Eid, R. Maalouf, A.A. Jaffa, J. Nassif, A. Hamdy, A. Rashid, F.N. Ziyadeh, A.A.Eid. 20-HETE and EETs in diabetic nephropathy: a novel mechanistic pathway. *PLoS One*. 8(8):e70029, 2013.
- A.A. Eid, A. Koubeissi, R. Bou-Mjahed, N.A. Khalil, M. Farah, R. Maalouf, N. Nasser, K.H. Bouhadir. Novel carbocyclic nucleoside analogs suppress glomerular mesangial cells proliferation and matrix protein accumulation through ROS-dependent mechanism in the diabetic milieu. *Bioorganic & Medicinal Chemistry Letters* 23:174-178, 2013.
- R. Maalouf, A.A. Eid, Y. Gorin, H.E. K. Block, G.P. Escobar, S.R. Bailey. H.E. Abboud, Nox4-derived reactive oxygen species mediate cardiomyocyte injury in early type 1 diabetes. *American Journal of Physiology Cell Physiology*.302:597-604, 2012.
- A.A. Eid, Y. Gorin, B.M. Fagg, R. Maalouf, J.L. Barnes, K. Block, H.E. Abboud. Mechanisms of podocytes injury in diabetes: Role of cytochromes P450 and NADPH oxidases. *Diabetes* 58:1201-1211, 2009.
- R. Maalouf, W. Hassen, C. Fournier-Wirth, J. Coste, N. Jaffrezic-Renault. Comparison of two innovatives approaches for bacterial detection: paramagnetic nanoparticles and self-assembled multilayer processes. *Microchimica Acta*, 163: 157-161, 2008.
- R. Maalouf, C. Fournier, J. Coste, H. Chebib, Y. Saikali, O. Vittori, M. Sigaud, A. Errachid, J.P. Cloarec, C. Martelet, N. Jaffrezic-Renault. Bacteria detection by electrochemical impedance spectroscopy: comparison with the immunoblotting and the surface plasmon resonance methods. *Analytical Chemistry*. 79:4879-4886, 2007.

- R. Maalouf, H. Chebib, Y. Saïkali, O. Vittori, M. Sigaud, N. Jaffrezic-Renault. Amperometric and impedimetric characterization of a glutamate biosensor based on nafion and a methyl viologen modified glassy carbon electrode. *Biosensors & Bioelectronics*. 22:2682-2688, 2007.
- R. Maalouf, H. Chebib, Y. Saikali, O. Vittori, M. Sigaud, F. Garrelie, C. Donnet, N. Jaffrezic-Renault. Characterization of different DLC electrodes for biosensor design. *Talanta*. 72:310-314, 2007.
- R. Maalouf and N. Jaffrezic-Renault, O. Vittori and M. Sigaud, Y. Saikali and H. Chebib, A. S. Loir, F. Garrelie and C. Donnet, T. Takeno and T. Takagi. Characterization of different DLC and DLN electrodes for biosensor design. *J. Adv. Sci.* 18 :31-36, 2006.
- R. Maalouf, A. Soldatkin, O. Vittori, M. Sigaud, Y. Saikali, H. Chebib, A.S. Loir, F. Garrelie, C. Donnet, N. Jaffrezic-Renault. Study of different carbon materials for amperometric enzyme biosensor development. *Materials Science and Engineering. C*. 26:564-567, 2006.

## Peer-reviewed Conference Proceedings

### Local

- R. Maalouf. Diabetic cardiomyopathy and treatment with nanoparticles for drug delivery. LAAS conference, 2015.

### International

- Maalouf, R., Eid, A.A., Gorin, Y., Escobar, G.P., Agrawal, M., Abboud, H.E., Bailey, S.R. Nox4 Mediates Cardiomyopathy Phenotype in Diabetes. American Heart Association, Orlando, Florida, 15-17 November 2009. *Circulation* 120: S457, 2009.

## Peer-reviewed Abstracts

- The 9th international workshop on Biosensors, October 9-11, 2019, Merzouga, Morocco. S. Sawan, K. Bou Hadir, G. Raimondi, A. Elaissari, N. Zine, R. Maalouf, A. Errachid, N. Jaffrezic-Renault. Heavy metal sensing via novel magnetic beads functionalized with nucleic bases derivatives.
- LAAS, March 22-24, 2012 at NDU, Louaize, Lebanon. R. Maalouf, A. Antoine Eid. Blockade of the mTOR pathway by rapamycin attenuates myocardial injury in diabetes.
- Arteriosclerosis, Thrombosis and Vascular Biology, 8-10 April 2010, San Diego, California. R. Maalouf, A.A. Eid, Y. Gorin, P. Escobar, H.E. Abboud, S.R. Bailey. The role of Nox4 in development of diabetic cardiomyopathy in type 1 diabetes.
- American Heart Association, Orlando, Florida, 15-17 November 2009. R. Maalouf, A.A. Eid, Y. Gorin, P. Escobar, M. Agrawal, H.E. Abboud, S.R. Bailey. Nox4 Mediates Cardiomyopathy Phenotype in Diabetes. *Circulation* 120: S457.
- American Society of Nephrology, San Francisco, California, October 27 - November 1, 2009. A.A. Eid, B.M. Fagg, R. Maalouf, K. Block, J.L. Barnes, Y. Gorin, H.E. Abboud. Mechanisms of Epithelial Cells Injury in Diabetes: A novel link between Cytochrome P450, AMPK and NADPH oxidases.
- Society of Biomaterials SFB, San Antonio, Texas, 22-25 April, 2009. R. Maalouf, M. Agrawal, S.R. Bailey. Implantable biosensor for Brain Natriuretic Peptide detection.
- Journées d'électrochimie 2007, Lyon, Villeurbanne, France, 6 Juillet 2007. R. Maalouf, W. Hassen, C. Fournier-Wirth, J. Coste, N. Jaffrezic-Renault. Comparison of two innovative approaches for bacterial detection: paramagnetic nanoparticles and self-assembled multilayer processes.
- 11th International Conference on Electroanalysis of the European Society for ElectroAnalytical Chemistry (ESEAC), Bordeaux, 11-15 June, 2006. R. Maalouf, H. Chebib, Y. Saïkali, O. Vittori, M. Sigaud, N. Jaffrezic-Renault. Amperometric and impedimetric characterization of a glutamate biosensor based on nafion and a methyl viologen modified glassy carbon electrode.
- 9th world congress on Biosensors, Toronto, Canada, 10-12 May 2006. R. Maalouf, H. Chebib, Y. Saïkali, O. Vittori, M. Sigaud, N. Jaffrezic-Renault. Amperometric and impedimetric characterization of a glutamate biosensor based on nafion and a methyl viologen modified glassy carbon electrode.
- Journée ARATEM « l'Agence Rhone-Alpes pour la maîtrise des Technologies de Mesure », 2006, Grenoble, France. 12. R. Maalouf, H. Chebib, Y. Saikali, O. Vittori, M. Sigaud, F. Garrelie, C. Donnet, N. Jaffrezic-Renault. Characterization of different DLC electrodes for biosensor design.
- International Joint Conference of JFSIMS and SMEBA 2005 (Japan-France Seminar on Intelligent Materials and Structures and International Symposium on Smart Materials for Engineering and Biomedical Application), Tokyo and Hakone (Japan), 29-31 October 2005. R. Maalouf and N. Jaffrezic-Renault, O. Vittori and M. Sigaud, Y. Saikali and H. Chebib, A. S. Loir, F. Garrelie and C. Donnet, T. Takeno and T. Takagi. Characterization of different DLC and DLN electrodes for biosensor design.

## Specialized Reports

### Local

- CNRS, 2012.

## Exhibitions, Competitions and Creative Work

### Local

- Best Poster, LAAS conference, 2012.
- Member of the LAAS scientific committee, 2015.
- Entrepreneurship conference, DEEL project, AUF, 2020.

### International

- Junior Investigator Award for Women Finalists, ATVB meeting, 2010.
- Visiting professor at INSA UMR CNRS 5280, Claude Bernard University, June 2018.
- Memorandum of agreement between Claude Bernard University and Notre Dame University for co-direction of doctorate degree, 2019.