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## Education

- 2007** Ph.D., Bioorganic Chemistry, Arizona State University
- 2000** B.S., Microbiology/ Molecular Biology, Arizona State University
- 1995** B.S., Chemical Biology, Mutah University

## Employment History

- 2014 - Present** Assistant Research Professor, Center for BioEnergetics  
Biodesign Institute at Arizona State University, Tempe, AZ
- 2010 - 2014** Assistant Research Scientist, Center for BioEnergetics  
Biodesign Institute at Arizona State University, Tempe, AZ
- 2007 - 2010** Postdoc, Center for BioEnergetics, Biodesign Institute at Arizona State  
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## Publications

- D. Mastroeni, **O. M. Khmour**, E. Delvaux, J. Nolz, G. Olsen, N. Berchtold, C. Cotman, S. M. Hecht, P. D. Coleman. Nuclear but not mitochondrial-encoded OXPHOS genes are altered in aging, mild cognitive impairment, and Alzheimer's disease. *Alzheimers Dement.* S1552-5260(16)32932-6 (**2016**).
- A. Chevalier, Y. Zhang, **O. M. Khmour**, J. B. Kaye, S. M. Hecht. Mitochondrial Nitroreductase Activity Enables Selective Imaging and Therapeutic Targeting, *JACS*.138(37):12009-12012 (**2016**)
- A. Chevalier, Y. Zhang, **O. M. Khmour**, S. M. Hecht. Selective Functionalization of Antimycin A Through an N-Transacylation Reaction, *Org. Lett.* 18(10):2395-2398 (**2016**)
- A. Chevalier, M. P. Alam, **O. M. Khmour**, M. Schmierer, P. M. Arce, C. D. Cripe, S. M. Hecht. Optimization of pyrimidinol antioxidants as mitochondrial protective agents: ATP production and metabolic stability, *Bioorg. Med. Chem.*, 24, 5206-5220 (**2016**).

- D. Mastroeni\*, **O.M. Khdour**,\* P. M. Arce, S. M. Hecht, P. D. Coleman. Novel Antioxidants Protect Mitochondria from the Effects of Oligomeric Amyloid Beta and Contribute to the Maintenance of Epigenome Function, *ACS Chem. Neurosci.*, 6, 588-598 (2015).
- M. P. Alam, **O. M. Khdour**, P. M. Arce, Y. Chen, B. Roy, S. Dey, W. G. Johnston and S. M. Hecht, Cytoprotective Pyridinol Antioxidants as Potential Therapeutic Agents for Neurodegenerative and Mitochondrial Diseases. *Bioorg. Med. Chem.*, 22, 4935-4947 (2014).
- **O. M. Khdour**, P. M. Arce, B. Roy and S. M. Hecht, An Optimized Pyrimidinol Multifunctional Radical Quencher, *ACS Med. Chem. Lett.*, 4, 724-729 (2013).
- M. M. Madathil, **O. M. Khdour**, J. Jaruvangsanti and S. M. Hecht, A Structurally Simplified Analogue of Geldanamycin Exhibits Neuroprotective Activity, *ACS Med. Chem. Lett.*, 4, 953-957 (2013).
- D. M. Fash, **O. M. Khdour**, S. J. Sahdeo, R. Goldschmidt, J. Jaruvangsanti, S. Dey, P. M. Arce, V. C. Collin, G. A. Cortopassi and S. M. Hecht, Effects of Alkyl Side Chain Modification of Coenzyme Q<sub>10</sub> on Mitochondrial Respiratory Chain Function and Cytoprotection, *Bioorg. Med. Chem.*, 21, 2346-2354 (2013).
- R. Goldschmidt, P. M. Arce, **O. M. Khdour**, V. C. Collin, S. Dey, J. Jaruvangsanti, D. M. Fash and S. M. Hecht, Effects of Cytoprotective Antioxidants on Lymphocytes from Representative Mitochondrial Neurodegenerative Diseases, *Bioorg. Med. Chem.*, 21, 969-978 (2013).
- M. M. Madathil, **O. M. Khdour**, J. Jaruvangsanti and S. M. Hecht, Synthesis and Biological Activities of *N*-(3-Carboxylpropyl)-5-amino-2-hydroxy-3-tridecyl-1,4-benzoquinone and Analogues, *J. Nat. Prod.*, 75, 2209-2215 (2012).
- P. M. Arce, R. Goldschmidt, **O. M. Khdour**, M. M. Madathil, J. Jaruvangsanti, S. Dey, D. M. Fash, J. S. Armstrong and S. M. Hecht, Analysis of the Structural and Mechanistic Factors in Antioxidants that Preserve Mitochondrial Function and Confer Cytoprotection, *Bioorg. Med. Chem.*, 20, 5188-5201 (2012).
- X. Cai, **O. M. Khdour**, J. Jaruvangsanti and S. M. Hecht, Simplified Bicyclic Pyridinol Analogues Protect Mitochondrial Function, *Bioorg. Med. Chem.*, 20, 3584-3595 (2012).
- P. M. Arce, **O. M. Khdour**, R. Goldschmidt, J. S. Armstrong and S. M. Hecht, A Strategy for Suppressing Redox Stress Within Mitochondria, *ACS Med. Chem. Lett.*, 2, 608-613 (2011).
- **O. M. Khdour**, J. Lu and S. M. Hecht, An Acetate Prodrug of a Pyridinol-Based Vitamin E Analogue, *Pharm. Res.*, 28, 2896-2909 (2011).
- J. Lu, **O. M. Khdour**, J. S. Armstrong and S. M. Hecht, Design, Synthesis, and Evaluation of an  $\alpha$ -Tocopherol Analogue as a Mitochondrial Antioxidant, *Bioorg. Med. Chem.*, 18, 7628-7638 (2010).
- J. S. Armstrong, **O. Khdour** and S. M. Hecht, Does Oxidative Stress Contribute to the Pathology of Friedreich's Ataxia? A Radical Question, *FASEB J.*, 24, 2152-2163 (2010).

- S. J. Leiris, **O. M. Khdour**, Z. J. Segerman, K. S. Tsosie, J.-C. Chapuis and S. M. Hecht, Synthesis and Evaluation of Verticipyronone Analogues as Mitochondrial Complex I Inhibitors, *Bioorg. Med. Chem.*, 18, 3481-3493 (2010).
- J.-C. Chapuis, **O. Khdour**, X. Cai, J. Lu and S. M. Hecht, Synthesis and Characterization of  $\Delta$ lac-Acetogenins that Potently Inhibit Mitochondrial Complex I, *Bioorg. Med. Chem.*, 17, 2204-2209 (2009).
- **O. Khdour** and E. Skibo, Quinone Methide and Cation Chemistry of Prekinamycins:  $^{13}\text{C}$ -Labeling, Spectral Global Fitting and *In Vitro* Studies, *J. Org. Biomol. Chem.*, 7, 2140-2154 (2009).
- **O. Khdour** and E. B. Skibo, Chemistry of Pyrrolo[1,2-A]indole- and Pyrindo[1,2-a]Indole-Based Quinone Methides. Mechanistic Explanations for Differences in Cytostatic/Cytotoxic Properties. *J. Org. Chem.*, 72, 8636-8647 (2007).
- **O. Khdour**, A. Ouyang and E. B. Skibo, Design of a Cyclopropyl Quinone Methide Reductive Alkylating Agent. 2., *J. Org. Chem.*, 71, 5855-5863 (2006).

#### Patent Activity

- Reducing Oxidative Stress with Multifunctional Radical Quenchers and their use. No. WO/2011/103536.
- Structurally Simplified Multifunctional Radical Quenchers. M12-085.
- Multifunctional Radical Quenchers and Simplified Synthesis Routes. M11-096.
- Alkylaminoquinones as Multifunctional Radical Quenchers United States Patent M13-038L

#### Conferences

- Arizona Alzheimer's Consortium Annual Scientific Conference, Effects of cytoprotective multifunctional radical quenchers on lymphocytes from representative mitochondrial and neurodegenerative Diseases, 2013
- Arizona Alzheimer's Consortium Annual Scientific Conference, Multifunctional radical quenchers protect against amyloid beta ( $\text{A}\beta$ ) – induced neurotoxicity in a differentiated human neuron-like SH-SY5Y cell line, 2012
- Multifunctional Radical Quenchers for the Treatment of Friedreich's Ataxia, 4<sup>th</sup> Friedrich Ataxia Research Alliance (FARA) International Scientific Conference, 2011 (France).
- Friedrich Ataxia Research Alliance (FARA), mitochondria summit meeting, "Mitochondria Dysfunction in Disease and Therapeutic Approaches". Arizona State University, Biodesign Institute, 2008.