

Institute for In Vitro Sciences, Inc  
30 W Watkins Mill Road #100  
Gaithersburg, Maryland 20878

**Curriculum Vitae**  
**Vivek S. Patel**

**Education**

- 2016** Ph.D. (Pharmaceutical Sciences, Toxicology), St. John's University, Queens, NY
- 2011** M.S. (Pharmaceutical Sciences, Toxicology), St. John's University, Queens, NY
- 2007** B. Pharm. (Pharmacy), North Maharashtra University, Shirpur, Maharashtra, (India)

**Experience**

**2021 – Present Toxicologist II / Study Director – Institute for In Vitro Sciences, Inc.**

Assist commercial clients to develop appropriate in vitro toxicology programs for their products. Establish and oversee internal R&D projects to develop and commercialize in vitro models and assays for respiratory research and testing. Interact with industry, animal welfare groups and government as necessary to discuss use of in vitro methods. Develop appropriate product safety evaluation literature emphasizing in vitro methods. Produce manuscripts based on R&D projects and in collaboration with clients. Generate background review documents detailing the performance characteristics and predictive capacity of various in vitro assays. Organize and/or participate in other IIVS programs. Manage laboratory personnel and schedules to ascertain timely completion of projects.

**2019 – 2021 Toxicologist I / Study Director – Institute for In Vitro Sciences, Inc.**

Assist commercial clients in developing appropriate in vitro toxicology programs for their products. Assist to establish and oversee internal R&D projects to develop and commercialize in vitro assays/methods for respiratory research and testing. Manage laboratory personnel and schedules to ascertain timely completion of projects. Prepare regulatory compliant written reports of the study methods, results, and interpretations. Produce manuscripts based on R&D projects and in collaboration with clients.

**2017 – 2019 Postdoctoral Researcher – Louisiana State University**

Worked on a collaborative team (LSU Superfund Research Center) towards identifying the physicochemical characteristics and health effects of pollutant-

particulate matter systems. The goal was to protect human health by providing information to be used in risk-based decisions on treatment options for Superfund wastes. Developed projects to study the altered pulmonary immune responses to influenza infection and toxicity associated with acute and sub-chronic exposure to combustion-derived particulate matter (PM). Presented data at scientific conferences, wrote grants based on preliminary data and published data in peer-reviewed scientific journals. Trained graduate and undergraduate students and worked with them to develop their thesis projects.

**2016 – 2017      Postdoctoral Fellow – University of Tennessee Health Science Center**

Designed and developed a research project to study the exacerbated asthma pathologies associated with exposure to combustion-derived particulate matter (PM). Investigated the role of aryl hydrocarbon receptors in PM-induced Th17 cell-mediated neutrophilic inflammation in asthma. Presented data at scientific conferences, wrote grants based on preliminary data and published data in peer-reviewed scientific journals. Managed the maintenance of laboratory instruments (Luminex 200 and BD Canto II) and trained new users.

**Scientific Awards and Recognitions**

**2019**    PIC 2019 Poster Award

**2016**    Figure Art chosen for the cover of October 2016 issue of AJRCMB

**2013**    Best Paper of the Year Award, Immunotoxicology Specialty Section, SOT

**2013**    Paper highlighted as ‘Papers by Junior Investigators’ in AJRCMB

**Peer Review Activities**

**Grants –**

Alternatives Research & Development Foundation

**Manuscripts –**

American Journal of Respiratory Cell and Molecular Biology, Antioxidants & Redox Signaling, Cellular Physiology and Biochemistry, Reviews on Environmental Health, Medicine, Modern Research in Inflammation, Journal of Cancer Therapy, Applied Medical Research

**Leadership Roles**

**Trainee Leadership Advisory Board of Louisiana State University Superfund Research Center** – Organized and arranged scientific seminars and training activities.

**Published manuscripts**

Sitapara, R. A., Gauthier, A. G., **Patel, V. S.**, Lin, M., Zur, M., Ashby, C. R. Jr., Mantell, L. L. The  $\alpha 7$  nicotinic acetylcholine receptor agonist GTS-21 improves bacterial clearance in mice by restoring hyperoxia-compromised macrophage function. *Mol Med.* 2020 Oct 30;26(1):98.

Gore A., Gauthier A.G., Lin M., **Patel V.**, Thomas D.D., Ashby C.R. Jr., Mantell L.L.. The nitric oxide donor, (Z)-1-[N-(2-aminoethyl)-N-(2-ammonioethyl)amino]diazene-1-ium-1,2-diolate (DETA-NONOate/D-NO), increases survival by attenuating hyperoxia-compromised innate immunity in bacterial clearance in a mouse model of ventilator-associated pneumonia. *Biochem Pharmacol.* 2020 Jun;176:113817.

**Patel, V.**, Dial, K., Wu, J., Gauthier, A. G., Wu, W., Lin, M., Espey, M. G., Thomas, D. D., Ashby, C. R., Jr. & Mantell, L. L. (2020). Dietary Antioxidants Significantly Attenuate Hyperoxia-Induced Acute Inflammatory Lung Injury by Enhancing Macrophage Function via Reducing the Accumulation of Airway HMGB1. *International journal of molecular sciences*, 21(3), 977.

Jaligama, S., **Patel, V. S.**, Wang, P., Sallam, A., Harding, J., Kelley, M., Mancuso, S. R., Dugas, T. R. and Cormier, S. A. (2018). "Radical containing combustion derived particulate matter enhance pulmonary Th17 inflammation via the aryl hydrocarbon receptor." *Particle and Fibre Toxicology* 15(1): 20.

Fitzpatrick, E. A., You, D., Shrestha, B., Siefker, D., **Patel, V. S.**, Yadav, N., Jaligama, S. and Cormier, S. A. (2017). "A Neonatal Murine Model of MRSA Pneumonia." *PLoS One* 12(1): e0169273.

**Patel, V. S.**, Sampat, V., Espey, M. G., Sitapara, R., Wang, H., Yang, X., Ashby, C. R., Jr., Thomas, D. D. and Mantell, L. L. (2016). "Ascorbic Acid Attenuates Hyperoxia-Compromised Host Defense against Pulmonary Bacterial Infection." *Am J Respir Cell Mol Biol* 55(4): 511-520.

Sharma, L., Wu, J., **Patel, V.**, Sitapara, R., Rao, N. V., Kennedy, T. P. and Mantell, L. L. (2014). "Partially-desulfated heparin improves survival in Pseudomonas pneumonia by enhancing bacterial clearance and ameliorating lung injury." *J Immunotoxicol* 11(3): 260-267.

Entezari, M., Javdan, M., Antoine, D. J., Morrow, D. M., Sitapara, R. A., **Patel, V.**, Wang, M., Sharma, L., Gorasiya, S., Zur, M., Wu, W., Li, J., Yang, H., Ashby, C. R., Thomas, D., Wang, H. and Mantell, L. L. (2014). "Inhibition of extracellular HMGB1 attenuates hyperoxia-induced inflammatory acute lung injury." *Redox Biol* 2: 314-322.

**Patel, V. S.**, Sitapara, R. A., Gore, A., Phan, B., Sharma, L., Sampat, V., Li, J. H., Yang, H., Chavan, S. S., Wang, H., Tracey, K. J. and Mantell, L. L. (2013). "High Mobility Group Box-1 mediates hyperoxia-induced impairment of Pseudomonas aeruginosa clearance and inflammatory lung injury in mice." *Am J Respir Cell Mol Biol* 48(3): 280- 287.

**Published book chapters**

Sharma, L., Wu, W., Dholakiya, S. L., Gorasiya, S., Wu, J., Sitapara, R., **Patel, V.**, Wang, M., Zur, M., Reddy, S., Siegelau, N., Bamba, K., Barile, F. A. and Mantell, L. L. (2014). "Assessment of phagocytic activity of cultured macrophages using fluorescence microscopy and flow cytometry." *Methods Mol Biol* 1172: 137-145.

**Poster/Oral presentations (Selected)**

**Oral Presentation** (IL22 Mediates Environmentally Persistent Free Radical Exposure-Exacerbated Influenza Infection) **Patel V. S.** The 16<sup>th</sup> International Congress on Combustion By-Products and Their Health Effects, July 11, 2019, Ann Arbor, MI

**Poster** (IL22 Mediates Environmentally Persistent Free Radical Exposure-Exacerbated Influenza Infection) **Patel V. S.**, Harding J., Vu L., You D., Cormier S. A. The 16<sup>th</sup> International Congress on Combustion By-Products and Their Health Effects, July 2019, Ann Arbor, MI

**Poster** (IL22 Mediates Environmentally Persistent Free Radical Exposure-Exacerbated Influenza Infection) **Patel V. S.**, Harding J., You D., Cormier S. A. Society Of Toxicology Annual Meeting, March 2018, San Antonio, TX

**Poster** (IL22 Mediates Environmentally Persistent Free Radical Exposure-Exacerbated Influenza Infection) **Patel V. S.**, Harding J., You D., Cormier S. A. NIEHS Superfund Research Program Annual Meeting, December, 2017, Philadelphia, PA

**Poster** (Contribution of CF airway epithelium to the elevated levels of HMGB1 in response to PA infection) **Patel V. S.**, Yang X., Mantell L. American Thoracic Society Annual Meeting, May 2015, Denver, CO

**Poster** (Ascorbic acid improves hyperoxia-compromised host defense against *Pseudomonas aeruginosa* infection) **Patel V. S.**, Sampat V. Espey, M.G., Sitapara R., Yang X., Ashby C.R. Jr., Thomas, D.D., Mantell L. Society Of Toxicology Annual Meeting, March 2015, San Diego, CA

**Poster** (Ascorbic acid improves hyperoxia-compromised host defense against *Pseudomonas aeruginosa* infection) Mantell L. and **Patel V. S.** Society For Redox Biology and Medicine Annual Meeting, November 2014, Seattle, WA

**Poster** (HMGB1 mediates hyperoxia-induced impairment of *Pseudomonas aeruginosa* clearance and inflammatory lung injury in mice) **Patel V. S.**, Sitapara R., Gore A., Sharma, L., Wang H., Mantell L. Society Of Toxicology Annual Meeting, March 2013, San Antonio, TX

**Poster** (HMGB1 in hyperoxia-compromised host ability to clear *Pseudomonas aeruginosa* pneumonia) **Patel V. S.**, Sitapara R., Gore A., Mantell L. Society Of Toxicology Annual Meeting, March 2011, Washington D.C.