



## Md Khadem Ali

Postdoctoral Research Fellow, Pulmonary and Critical Care Medicine

### Bio

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#### BIO

Dr MK Ali is a self-motivated and ambitious immunology and microbiology research scientist specialized in asthma, IPF, PH, and respiratory infectious disease. His academic and research training across 4 nations and 3 continents has given him skills in in vitro and in vivo disease modeling, airway/tissue remodeling, fibrosis, biomarker discovery, gene editing. His longer-term goal is to discover novel drug for unmet medical needs in critical respiratory diseases.

#### Summary of Qualifications:

- Proven track record of critical scientific thinking, multi-tasking ability, and strong leadership and communication skills with 8 years of research experience in immunology and microbiology as evidenced in 12 peer reviewed publications (Citations 230, H index 6) and 24 conference papers
- Achieved 12 awards and scholarships
- Reviewer for 4 international scientific journals, member of 12 scientific associations
- Mentored 5 undergraduate and 1 junior PhD students, demonstrated immunology and microbiology lab course for 3 years
- Proven first-hand experience handling and working with mice, rats and rabbits; experience conducting survival surgeries, experiments, drug treatments
- Extensive first-hand experience on murine models of asthma, IPF, COPD, PH and respiratory infectious diseases; strong experience in airway/tissue remodeling, airway/lung inflammation, emphysema, collagen deposition around airways and lung tissues, lung function, FACS, immune cells phenotypic characterization, in vivo evaluation of gene-based or therapeutics
- First-hand strong experience on handling and production of Haemophilus, Pseudomonas, Chlamydia respiratory infection, bacterial recovery from blood, BAL fluid, and lung
- Extensive experience with primary lung epithelial, fibroblast, and endothelial cell and cardiac fibroblast culture, 10 cell lines culture, in vitro disease models, cytotoxic assays, cell proliferation, apoptosis, cytokines detection
- First-hand strong experience on CRISPR/shRNA/siRNA-based gene silencing techniques
- Proficiency with molecular cloning, manipulation, viral vectors, virus production, bacterial culture, transformation, protein expression, isolation, and purification
- Proven first-hand experience with ELISA, westernblot, phosphorylations; histochemical, immunohistochemical techniques (light, fluorescence, confocal microscopy), qPCR, In Situ hybridization, RNAscope, RNA-seq
- Expertise in bioinformatics tools such as Gene Trail, Go annotations and KEGG pathways, Panther, MGI, DAVID, STRING network analysis

#### HONORS AND AWARDS

- PhD Award, The University of Newcastle, Australia (2018)
- Travel Award, The Thoracic Society of Australia and New Zealand (TSANZ) Travel Award (2017)
- Postgraduate Research Scholarship, The University of Newcastle, Australia (2014)

- MS Award, Chung-Ang University, South Korea (2013)
- Young Scientist Award, Chung-Ang University Young Scientist Award (CAYSS) (2011)
- B.Sc Honors Award, Khulna University, Bangladesh (2009)
- Merit Scholarship Award, Khulna University, Bangladesh (2008)

## BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, World Association for Bronchology and Interventional Pulmonology (2018 - present)
- Member, European Respiratory Society (2017 - present)
- Member, The Thoracic Society for Australia and New Zealand (2016 - present)
- Member, International BioIron Society (2015 - present)
- Member, International society for infectious diseases (2015 - present)
- Member, Asia Pacific Association of Pediatric Allergy, Respirology and Immunology (2015 - present)
- Member, Priority Research Centre-Healthy Lungs, University of Newcastle, Australia (2014 - present)

## PROFESSIONAL EDUCATION

- Master of Science, Unlisted School (2013)
- Doctor of Philosophy, University Of Newcastle (2018)
- Bachelor of Science, Unlisted School (2010)

## STANFORD ADVISORS

- Edda Spiekerkoetter, Postdoctoral Faculty Sponsor

## Publications

### PUBLICATIONS

- **Delineating the molecular and histological events that govern right ventricular recovery using a novel mouse model of PA de-banding.** *Cardiovascular research*  
Boehm, M., Tian, X., Mao, Y., Ichimura, K., Dufva, M. J., Ali, K., Prosseda, S. D., Shi, Y., Kuramoto, K., Reddy, S., Kheyfets, V. O., Metzger, R. J., Spiekerkoetter, et al  
2019
- **IL-5/IL-13 drive NLRP3 inflammasome-mediated, steroid-resistant AHR in a model of obesity-associated asthma** *ERS International Congress 2019 abstracts*  
James, P., Kim, R., Brown, A., Rae, B., Mayall, J., Ali, M., Starkey, M., Robertson, A., Wood, L., Cooper, M., O'Neill, ., Hansbro, P., Horvat, et al  
2019
- **Impaired induction of Slc26a4 promotes respiratory acidosis and severe, steroid-resistant asthma**  
Kim, R., Pinkerton, J. W., Rae, B. E., Mayall, J. R., Brown, A. C., Nli, M., Goggins, B. J., Essilfie, A., Starkey, M. R., To, C., Bosco, A., Horvat, J. C., Hansbro, et al  
AMER ASSOC IMMUNOLOGISTS.2017
- **Role for dysregulated iron in the pathogenesis of murine models of lung disease**  
Horvat, J. C., Ali, M., Johnstone, D., Kim, R. Y., Mayall, J. R., Karim, R., Pinkerton, J. W., Heidari, M., Martin, K. L., Donovam, C., Liu, G., Milward, E. A., Hansbro, et al  
AMER ASSOC IMMUNOLOGISTS.2017
- **ROLE OF INCREASED IRON LEVELS IN THE PATHOGENESIS OF LUNG DISEASE**  
Ali, M., Kim, R., Johnstone, D., Essilfie, A., Mayall, J., Karim, R., Pinkerton, J., Heidari, M., Donovan, C., Liu, G., Martin, K., Milward, L., Hansbro, et al  
WILEY.2017: 69
- **HIGH FAT DIET-INDUCED OBESITY PROMOTES STEROID-RESISTANT ASTHMA THROUGH AN NLRP3 INFLAMMASOME-DEPENDENT MECHANISM**

Pinkerton, J., Kim, R., Mayall, J., Ali, M., Starkey, M., Robertson, A., O'Neill, L., Cooper, M., Hansbro, P., Horvat, J.  
WILEY.2017: 65

● **IMPAIRED INDUCTION OF SLC26A4 PROMOTES RESPIRATORY ACIDOSIS AND SEVERE, STEROID-INSENSITIVE ASTHMA**

Horvat, J., Pinkerton, J., Rae, B., Mayall, J., Brown, A., Ali, M., Goggins, B., Essilfie, A., Starkey, M., Bosco, A., Kim, R., Hansbro, P.  
WILEY.2017: 65

● **Role of iron in the pathogenesis of respiratory disease.** *The international journal of biochemistry & cell biology*

Ali, M. K., Kim, R. Y., Karim, R., Mayall, J. R., Martin, K. L., Shahandeh, A., Abbasian, F., Starkey, M. R., Loustaud-Ratti, V., Johnstone, D., Milward, E. A., Hansbro, P. M., Horvat, et al  
2017; 88: 181–95

● **Impaired Induction Of Slc26a4 Promotes Respiratory Acidosis And Severe, Steroid-Insensitive Asthma**

Kim, R. Y., Pinkerton, J. W., Rae, B., Mayall, J. R., Brown, A. C., Ali, M., Goggins, B., Essilfie, A., Starkey, M. R., Bosco, A., Horvat, J. C., Hansbro, P. M.  
AMER THORACIC SOC.2017

● **Role Of Increased Iron Levels In The Pathogenesis Of Lung Disease**

Horvat, J. C., Alit, M., Johnstone, D., Essilfie, A., Mayall, J., Pinkerton, J. W., Donovan, C., Liu, G., Martina, K., Milward, A. E., Hansbro, P. M.  
AMER THORACIC SOC.2017

● **Role for NLRP3 Inflammasome-mediated, IL-1 $\beta$ -Dependent Responses in Severe, Steroid-Resistant Asthma.** *American journal of respiratory and critical care medicine*

Kim, R. Y., Pinkerton, J. W., Essilfie, A. T., Robertson, A. A., Baines, K. J., Brown, A. C., Mayall, J. R., Ali, M. K., Starkey, M. R., Hansbro, N. G., Hirota, J. A., Wood, L. G., Simpson, et al  
2017; 196 (3): 283–97

● **Investigating antioxidant therapy for steroid-resistant asthma**

Pinkerton, J., Kim, R., Essilfie, A., Rae, B., Mayall, J., Ali, M., Starkey, M., Wood, L., Biswal, S., Horvat, J., Hansbro, P.  
EUROPEAN RESPIRATORY SOC JOURNALS LTD.2016

● **TARGETING OXIDATIVE STRESS FOR THE SUPPRESSION OF SEVERE, STEROID-INSENSITIVE ASTHMA**

Pinkerton, J., Kim, R., Essilfie, A., Rae, B., Mayall, J., Ali, M., Starkey, M., Wood, L., Biswal, S., Horvat, J., Hansbro, P.  
WILEY-BLACKWELL.2016: 105

● **Knockdown of the host cellular protein transportin 3 attenuates prototype foamy virus infection** *BIOSCIENCE BIOTECHNOLOGY AND BIOCHEMISTRY*

Ali, M., Kim, J., Hamid, F., Shin, C.  
2015; 79 (6): 943–51

● **Nuclear localization signals in prototype foamy viral integrase for successive infection and replication in dividing cells.** *Molecules and cells*

Hossain, A., Ali, K., Shin, C. G.  
2014; 37 (2): 140–48

● **Comparative sequence and expression analyses of African green monkey (*Cercopithecus aethiops*) TNPO3 from CV-1 cells** *GENES & GENOMICS*

Ali, M., Hossain, M., Shin, C.  
2013; 35 (4): 549–58

● **Structural and Functional Insights into Foamy Viral Integrase** *VIRUSES-BASEL*

Hossain, M., Ali, M., Shin, C.  
2013; 5 (7): 1850–66