



Sanjay Haresh Chotirmall

Associate Professor and Provost's Chair in Molecular Medicine and Assistant Dean (Faculty Affairs), Lee Kong Chian School of Medicine, NTU

Principal Investigator, Translational Respiratory Research Laboratory
Consultant Respiratory Physician, TTSH

Research Interests:

- Microbiome medicine
- Respiratory & Infectious Diseases

Email: schotirmall@ntu.edu.sg

Biography

Assoc Prof Chotirmall graduated from the Royal College of Surgeons in Ireland (RCSI) with an honours degree and the colleges' gold medal in Microbiology. He completed his early clinical training at Beaumont Hospital Dublin, while attaining memberships of the Royal College of Physicians of Ireland (MRCPI) and the United Kingdom (MRCP UK). Following this, he completed higher specialist training in Respiratory and Critical Care Medicine across multiple hospital sites in the Republic of Ireland.

He has been awarded the Royal Academy of Medicine of Ireland (RAMI) Doctor award on two occasions (2010 & 2013), the Irish Thoracic Society Award (2011), the Dublin Centre for Clinical Research (DCCR) Young Investigator Award (2011), the MMI-CSFP Medal (2011), the Royal College of Physicians William Stokes Award for research (2010) and the American Thoracic Societies International Award (2009). In 2018, he was conferred as fellow of the Royal College of Physicians in Ireland (FRCPI), in 2019 as Fellow of the American College of Chest Physicians (FCCP) and in 2020 a fellow of the Royal College of Physicians of the United Kingdom (London). In 2020, he was awarded the inaugural Dean's Award for Research at LKCMedicine and the Alumni Award for 'Research and Innovation' by the Royal College of Surgeons in Ireland (RCSI). In collaboration with colleagues at Tan Tock Seng Hospital (TTSH), Assoc Prof Chotirmall secured the NHG Research Impact Award (2021) for his work in bronchiectasis, a chronic irreversible lung disease of high Asian prevalence. In 2022, he was appointed Deputy Editor of the American Journal of Respiratory and Critical Care Medicine (IF: 21.4).

Selected Publications

- Chotirmall SH, Greene CM, Oglesby IK, et al. 17 β -Estradiol inhibits IL-8 in cystic fibrosis By up-regulating secretory leucoprotease inhibitor. *American Journal of Respiratory and Critical Care Medicine*. 2010; 182(1).
- Chotirmall SH, Smith SG, Gunaratnam C, et al. Effect of estrogen on pseudomonas mucoidy and exacerbations in cystic fibrosis. *The New England Journal of Medicine*. 2012; 366(21):1978-86.
- Chotirmall SH, Coughlan CA, Renwick J, et al. The effect of Aspergillus Fumigatus infection on vitamin D receptor expression in cystic fibrosis. *American Journal of Respiratory and Critical Care Medicine*. 2012; 186(10):999-1007.
- Chotirmall SH, Hector A, Lavelle GM, et al. Chitinase activation in patients with fungus-associated cystic fibrosis lung disease. *Journal of Allergy and Clinical Immunology*. 2016; 138(4):1183-89.

- Mac Aogáin M, Chandrasekaran R...Chotirmall SH. Immunological corollary of the pulmonary mycobiome in bronchiectasis: the CAMEB study. *European Respiratory Journal*. 2018; 52(1): pii1800766.
- Mac Aogáin M, Tiew PY... Chotirmall SH. Distinct 'Immuno-Allertypes' of disease and high frequencies of sensitisation in non-cystic fibrosis bronchiectasis. *American Journal of Respiratory and Critical Care Medicine*. 2018. doi: 10.1164/rccm.201807-1355OC.
- Chalmers JD, Chotirmall SH. Bronchiectasis: new therapies and new perspectives. *Lancet Respiratory Medicine*. 2018; 6(9):715-726.
- Chotirmall SH, Martinez FJ, Schumacker PT, Cooke CR, Seam N, Brochard L, Tighe RM, Levy BD, Gern D, Wedzicha JA. Life at the Editorial "COVID Frontline". The American Thoracic Society Journal Family. *Am J Respir Crit Care Med*. 2020; /201(12):1457-1459. doi: 10.1164/rccm.202005-1516ED.
- Tiew PY, Ko FWS, Narayana JK, Poh ME, Xu H, Neo HY, Loh LC, Ong CK, Mac Aogáin M, Tan JHY, Kamaruddin NH, Sim GJH, Lapperre TS, Koh MS, Hui DSC, Abisheganaden JA, Tee A, Tsaneva-Atanasova K, Chotirmall SH. "High-Risk" Clinical and Inflammatory Clusters in COPD of Chinese Descent. *Chest*. 2020; 22:S0012-3692(20)30326-3. doi: 10.1016/j.chest.2020.01.043. PMID: 32092320.
- Mac Aogáin M, Lau KJX, Cai Z, Narayana JK, Purbojati RW, Drautz-Moses DI, Gaultier NE, Jaggi TK, Tiew PY, Ong TH, Koh MS, Hou ALY, Abisheganaden JA, Tsaneva-Atanasova K, Schuster SC, Chotirmall SH. Metagenomics Reveals a Core Macrolide Resistome Related to Microbiota in Chronic Respiratory Disease. *Am J Respir Crit Care Med*. 2020. doi: 10.1164/rccm.201911-2202OC.
- Vidaillac C*, Yong VFL*, Aschtgen MS, Qu J...Normark S, Henriques-Normark B, Chotirmall SH. Sex Steroids Induce Membrane Stress Responses and Virulence Properties in *Pseudomonas aeruginosa*. *mBio*. 2020; 11(5):e01774-20. doi: 10.1128/mBio.01774-20.
- Tiew PY, Dicker AJ, Keir HR...Miller BE, Tal-Singer R, Chalmers JD, Chotirmall SH. A high-risk airway mycobiome is associated with frequent exacerbation and mortality in COPD. *Eur Respir J*. 2020; 2002050. doi: 10.1183/13993003.02050-2020.
- Mac Aogáin M*, Narayana JK*, Tiew PY...Chotirmall SH. Integrative microbiomics in bronchiectasis exacerbations. *Nat Med*. 2021. doi: 10.1038/s41591-021-01289-7.

Notable Research Awards & Grants From Past 5 Years

Name of Awards & Grants	Year Obtained
National Medical Research Council (NMRC) Transition Award (TA)	2017
NMRC Clinician-Scientist Individual Research Grant (CS-IRG)	2019
Provost's Chair in Molecular Medicine, NTU	2019
Royal College of Surgeons in Ireland (RCSI) Alumni Award: Research and Innovation	2020
Lee Kong Chian School of Medicine Dean's Award for Research	2020
NMRC COVID-19 Research Fund Grant	2020
NHG Research Impact Award	2021
Expertscape World Expert in Bronchiectasis	2021
NMRC Clinician-Scientist Award (CSA-INV)	2021

Translating Research into Healthcare

- Scientists make major cystic fibrosis breakthrough. *Irish Examiner*. Published 9 August 2010.
<https://www.irishexaminer.com/news/arid-30468625.html>
- Breathing a little easier. *Irish Medical Times*. Published 9 September 2010.
<https://www.imt.ie/clinical/breathing-a-little-easier-09-09-2010/>
- Royal College of Physicians of Ireland Announce Winner of 2010 William Stokes Award. *Royal College of Physicians of Ireland*. Published 17 November 2010.
<https://www.rcpi.ie/news/releases/royal-college-of-physicians-of-ireland-announce-winner-of-2010-william-stokes-award/>
- Cystic fibrosis breakthrough reveals why females fare worse than males. *ScienceDaily*. Published 24 May 2012.
<https://www.sciencedaily.com/releases/2012/05/120524092750.htm>
- Bronchiectasis Patients More Prone To Allergies, Study Shows. *AsianScientist*. Published 15 April 2019.
<https://www.asianscientist.com/2019/04/health/bronchiectasis-lung-disease-allergen-fungi-dust-mites/>
- COVID-19: Interim Guidance on Management Pending Empirical Evidence. *American Thoracic Society-led International Task Force*. Published 3 April 2020.
<https://www.thoracic.org/covid/covid-19-guidance.pdf>
- No direct link but climate change could affect response to Covid-19 pandemic: WHO. *The Straits Times*. Published 23 April 2020.
<https://www.straitstimes.com/singapore/health/coronavirus-no-direct-link-but-climate-change-could-affect-response-to-pandemic-who>
- NTU probes link between tiny air organisms and respiratory woes. *The Straits Times*. Published 9 May 2020.
<https://www.straitstimes.com/singapore/health/ntu-probes-link-between-tiny-air-organisms-and-respiratory-woes>
- Researchers propose new way to treat chronic lung condition. *News-Medical.Net*. Published 19 May 2021.
<https://www.news-medical.net/news/20210519/Researchers-propose-new-way-to-treat-chronic-lung-condition.aspx>
- Study led by NTU Singapore finds that microbes work as a network in causing lung infection. *EurekaAlert!*. Published 19 May 2021.
<https://www.eurekalert.org/news-releases/819099>