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Respiratory Diseases

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Aberrant mucus production and airway re-modelling are underlying pathologies of respiratory disease, and restoring mucociliary clearance is a key goal in developing new therapies for asthma, chronic obstructive pulmonary disease, and cystic fibrosis. Since pathogen-induced exacerbation of these diseases leads to hospitalization of the patient and can promote disease progression over time, the use of antibiotics and antivirals may result in the prevention or reduction in duration of the exacerbation. However, airway mucus may also act as a potential barrier for inhaled therapeutics. A collaboration between the Respiratory and Infectious Disease groups at NIBR aims to address the scientific question of how mucus may affect the delivery of inhaled therapeutics. We seek to determine the relationship between airway mucus production and penetration of inhaled therapeutics and establish pharmacokinetic/pharmacodynamic relationships.

Selected Publications

Characterization of a refined rat model of respiratory infection with *Pseudomonas aeruginosa* and the effect of ciprofloxacin. [2]
Growcott EJ, Coulthard A, Amison R, Hardaker EL, Saxena V, Malt L, Jones P, Grevot A, Poll C, Osborne C, Banner KH.
J Cyst Fibros. 2011 May;10(3):166-74.

Highlights of a workshop to discuss targeting inflammation in cystic fibrosis. [3]
Banner K, De Jonge H, Elborn S, Growcott E, Gulbins E, Konstan E, Moss R, Poll C, Randell SH, Rossi AG, Thomas L, Waltz D.
J Cyst Fibros. 2009 Jan;8(1):1-8. Review.

Phosphodiesterase type 4 expression and anti-proliferative effects in human pulmonary artery smooth muscle cells. [4]
Growcott EJ, Spink KG, Ren X, Afzal S, Banner KH, Wharton J.
Respir Res. 2006 Jan 19;7:9.

Click here [5] for additional publications.

Links
[1] https://www.novartis.com/our-science/postdoc-program/research-themes/pathways-biology/ellie-growcott-phd
[2] https://www.ncbi.nlm.nih.gov/pubmed/21247812
[3] https://www.ncbi.nlm.nih.gov/pubmed/19022708
[4] https://www.ncbi.nlm.nih.gov/pubmed/16423283
[5] https://www.ncbi.nlm.nih.gov/pubmed?term=Growcott%20E%5BAuthor%5D