

POLYMER SEMINAR

PROF. MICHAEL RUBINSTEIN

DEPARTMENT OF CHEMISTRY

UNIVERSITY OF NORTH CAROLINA, CHAPEL HILL



“Airway Surface Brush Sweeps Lungs Clean: Polymer Physics Helps Us Breathe Easier”

Summary

The classical view of the airway surface liquid (ASL) is that it consists of two layers – mucus and periciliary layer (PCL). Mucus layer is propelled by cilia and rides on the top of PCL, which is assumed to be a low viscosity dilute liquid. This model of ASL does not explain what stabilizes the mucus layer and prevents it from penetrating the PCL. I propose a different model of ASL in which PCL consists of a dense brush of mucins attached to cilia. This brush stabilizes mucus layer and prevents it penetration into PCL, while providing lubrication and elastic coupling between beating cilia. Both physical and biological implications of the new model will be discussed.



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SEMINAR 3:30 - 5:00 PM • REFRESHMENTS 3:00 PM

<http://polymerscience.mit.edu>

Information: Greg Sands (gsands@mit.edu/253-0949)