LUNG FLUID LINING: THE LUNG’S FIRST LINE OF DEFENSE

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Internal Lung Anatomy

- Internal airways are lined with fluid
Lung Lining Fluid

• Likely the most important mechanism of our lung’s defense system
  – Composed of:
    • Water
    • Antioxidants
    • Enzymes
    • Lipids
    • Proteins
• Distributed continuously throughout the respiratory tract
Its chemical makeup is different between the conducting airways and the alveoli (terminal air sacs)

- Airways are lined with airway surface liquid (ASL)
- Mucus gel-water solution that works along with the epithelial cilia to make the mucuciliary escalator
Defense Mechanism

- Fluid has antimicrobial properties
- Particles > 5 micrometers are trapped in the lining-fluid of the airways
- The high water content allows for the transfer of momentum from the beating cilia to the mucus “blanket” in the escalator system