

LOWER RESPIRATORY MICROANATOMY

Detailed Alveolar Duct and Sac Reference Chart

Key Components

- Respiratory Bronchiole
- Alveolar Duct
- Alveolar Sac
- Individual Alveolus
- Capillary Network
- Elastic Fibers

[Illustration Area:
Microscopic View of Acinus]

Structural Definitions

Structure	Histological Characteristics	Functional Role
Alveolar Duct	Straight corridors lined with smooth muscle knobs and simple squamous epithelium.	Conducts air from respiratory bronchioles to multiple alveolar sacs.
Alveolar Sac	Clusters of two or more alveoli sharing a common opening.	Common terminal airspace for gas distribution.
Type I Pneumocyte	Extremely thin, squamous cells covering 95% of alveolar surface.	Forms the primary blood-air barrier for rapid gas exchange.
Type II Pneumocyte	Cuboidal cells with lamellar bodies.	Secretes pulmonary surfactant to reduce surface tension.

Structure	Histological Characteristics	Functional Role
Alveolar Pores	Small openings (Pores of Kohn) in septal walls.	Allows collateral ventilation between adjacent alveoli.

Medical Education Template | Anatomy & Physiology | Ref: Lower Respiratory Tract