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Collagen IV: a critical new starting point for engineering upper airways

Martina M. De Santis ^{1,2,3} and Darcy E. Wagner ^{1,2,3}

Affiliations: ¹Lung Bioengineering and Regeneration, Dept of Experimental Medical Sciences, Faculty of Medicine, Lund University, Lund, Sweden. ²Wallenberg Molecular Medicine Center, Faculty of Medicine, Lund University, Lund, Sweden. ³Lund Stem Cell Center, Faculty of Medicine, Lund University, Lund, Sweden.

Correspondence: Darcy E. Wagner, Lund University, Dept of Experimental Medical Sciences, B10 BMC Lund, Sweden. E-mail: darcy.wagner@med.lu.se

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Collagen IV and integrin alpha 2 engagement is critical for forming differentiated airway epithelium capable of mucociliary clearance *in vitro*, but pre-vascularised scaffolds transplanted under immunosuppression fail to maintain differentiated epithelium <https://bit.ly/2wT9XK5>

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Half a century has passed since the discovery of collagen IV in 1966 by KEFALIDES [1]. Collagen IV is the main collagen component of the basement membrane in many organs, including the lung and trachea. It is a network-forming collagen that underlies epithelial and endothelial cells and serves a crucial role in forming barriers between tissue compartments [2, 3]. Mature collagen IV is a heterotrimer comprised from a combination of two or three of the six known collagen IV alpha chains which are increasingly recognised as being tissue- and organ-specific. Integrin $\alpha 2$ is a known cellular receptor for attachment to collagen IV and through interactions with different binding partners, influences cell adhesion, migration and polarity [4].