Journal of Allergy & Therapy
ISSN: 2155-6121

de Paula Vieira, J Aller Ther 2012, S7
DOI: 10.4172/2155-6121.S7-e001

Editorial Open Access

Pulmonary Developmental Biology

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The pulmonary development is extremely complex and highly ordered, a process involving several cell types, which are involved in different phases of development, beginning in the embryonic phase until the differentiation and specialization of cells forming specialized organs [1].

The development of respiratory system (larynx, trachea, bronchi and lungs) begins in the fourth week of embryonic development, and remains incomplete until the last weeks of fetal development, becoming mature just before the birth [2,3]. Both upper (nose, nasal cavity and pharynx) and lower (larynx, trachea, bronchi and lungs) respiratory tract have its origin and development from embryonic endoderm, specifically from the digestive tube [2,3].

However, several signaling via, genes and different molecules are involved in this very complex process, as fibroblast growth factor 10 [4], Trmt112 gene [5], leukemia inhibitory factor [6], homeodomain transcription factor Nkx2-1 [7], NF-kB and VEGF [8], for instance. In fact, the knowledge about the precise mechanisms of biology of pulmonary development is still poorly understood and requires a lot of effort and investments [9].

Therefore, the present special issue of Journal of Allergy and Therapy aims to present concentrate and also summarize the recent findings regarding different aspects of pulmonary development biology.

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Received November 15, 2012; **Accepted** November 20, 2012; **Published** November 25, 2012

Citation: de Paula Vieira R (2011) Pulmonary Developmental Biology. J Aller Ther S7:e001. doi:10.4172/2155-6121.S7-e001