CDB SEMINAR

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16:00~17:00 A7F Seminar Room

Transition zone: The dramatic change of lung progenitors to terminally differentiated cells

Summary
During organogenesis and tissue regeneration, progenitor cells undergo a transition from a stem-like state to a committed cell fate to initiate their differentiation.
In the respiratory epithelium these cells occupy a parabasal position in between the basal and luminal cells. This region is broader in human airways than in mice and changes have been associated with human conditions such as COPD. An in depth analysis of the cells in this unique zone can provide insights into the mechanisms that control the progenitor pools and commitment during homeostasis and repair.
Pseudostratified airways are composed of basal cells lining the basement membrane, and luminal cells such as multiciliated and secretory cells.
During the process of airway repair in adult mice lungs, basal and secretory cells can self-renew and specify to other types of cells as airway progenitors, while multiciliated cells are terminally differentiated. Little is known about the nature of suprabasal cells, and how airway progenitors expand and transition to parabasal cells, and eventually to the terminally differentiated cells. Here we will provide novel evidence and topics related to these questions.

Host:
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Mori M et al., Notch3-Jagged signaling controls the pool of undifferentiated airway progenitors. Development. 2015 Jan 15;142(2):258-67.
Mahoney EJ, Mori M et al., The hippo pathway effector Yap controls patterning and differentiation of airway epithelial progenitors. Dev Cell. 2014 Jul 28;30(2):137-50.