



Extracellular matrix stiffness associated with pulmonary fibrosis sensitizes alveolar epithelial cells to PM

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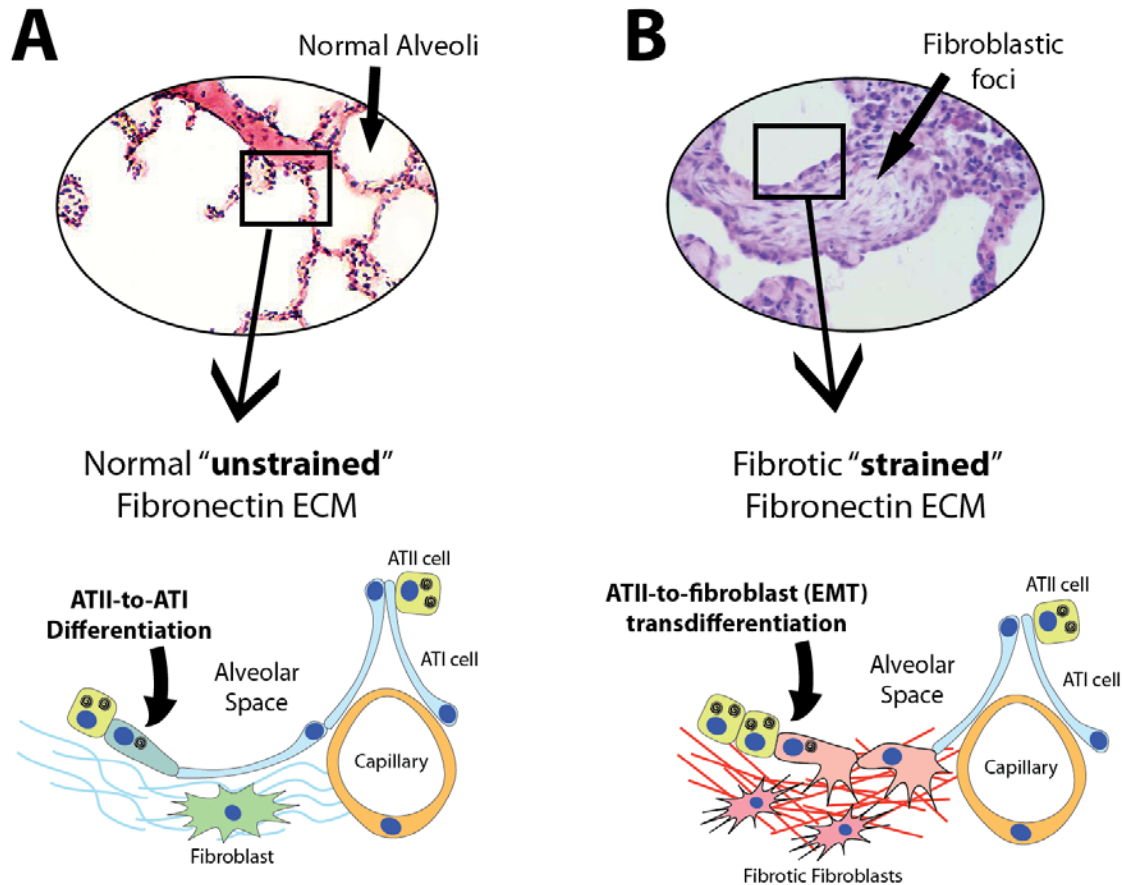
EMORY
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Rationale:

Cell:ECM crosstalk:

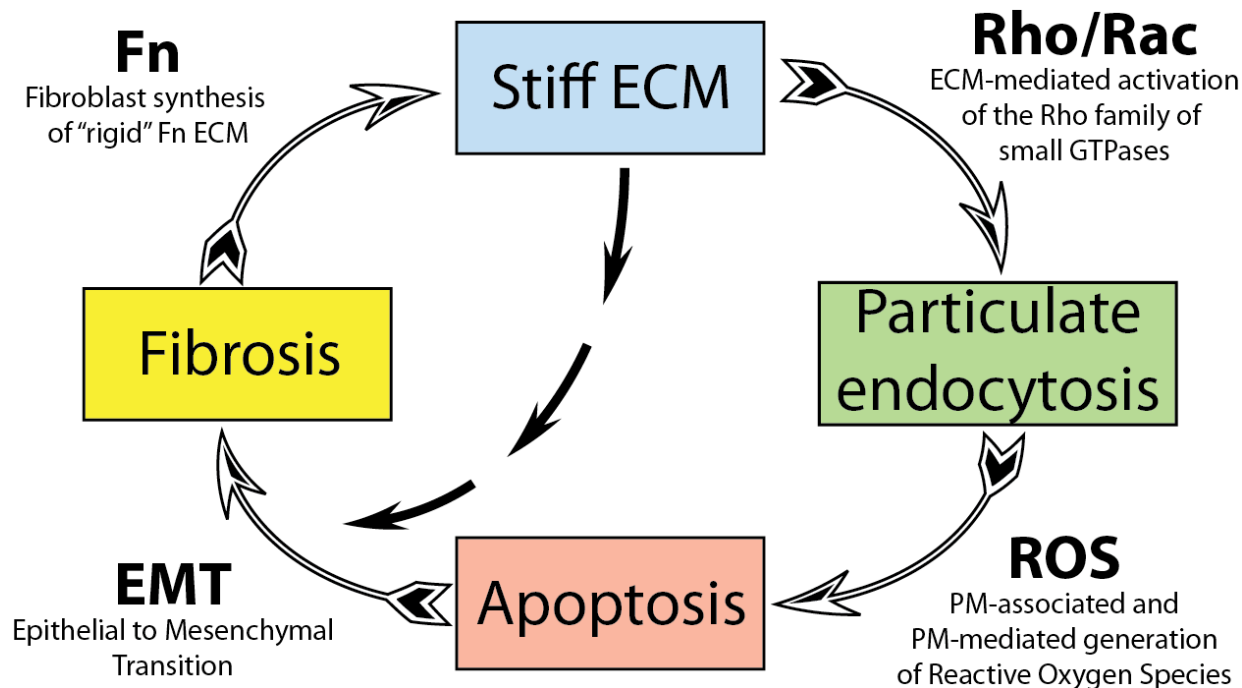
Implications in pathology and regenerative medicine



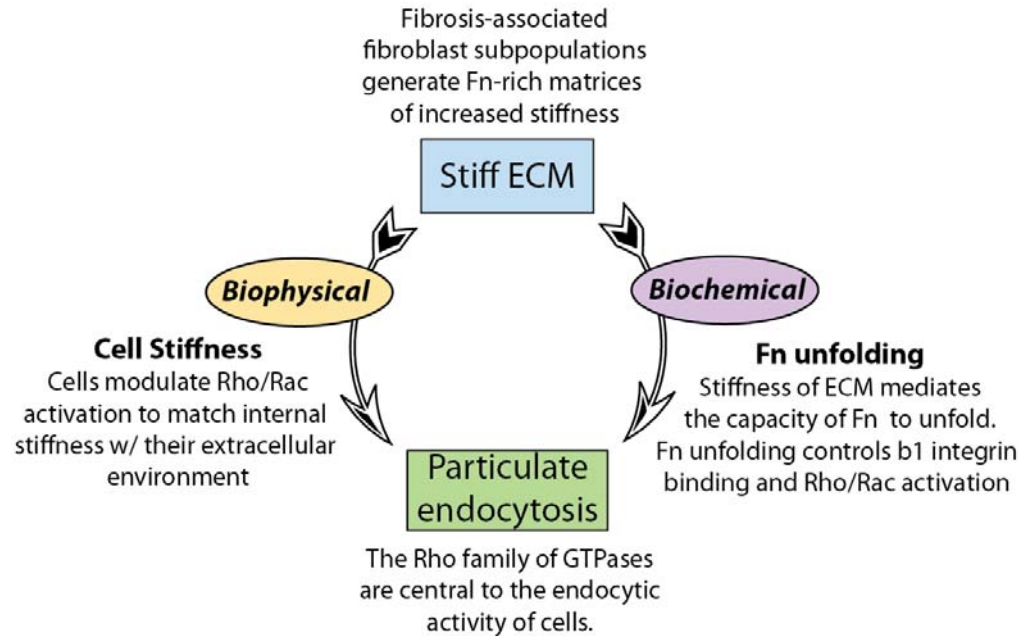


Hypothesis:

Increased stiffness of fibronectin ECM associated with pulmonary fibrosis enhances Type II epithelial cell endocytosis of particulates through the activation of the Rho family of small GTPases.



Study Design:



I. Quantify “meso”scale lung stiffness in fibrotic model

in vitro:

1. Mimic range of tissue stiffness with polyacrylamide gels.
2. Quantify Rho/Rac activation.
3. Correlate substrate stiffness to particle endocytosis.

in vivo:

1. Induce lung fibrosis.
2. Quantify Rho/Rac activation and cross correlate with regional stiffness mapping.
3. Determine regional particulate endocytosis.