



A novel anti-inflammatory agent to prevent fibrosis during cancer therapy



TEDCO/NIH/NCI Technology Showcase

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Technology



•SCGB3A2 (Secretoglobin 3A2) is a small secreted protein with novel anti-inflammatory function.

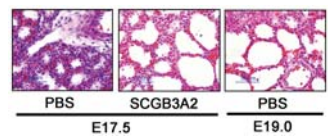
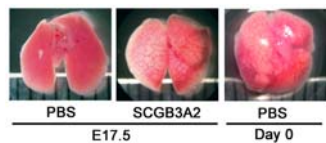
•SCGB3A2 is predominantly expressed in the epithelial cells of airways.

•SCGB3A2 is a novel growth factor:

- promotes branching morphogenesis of mouse fetal lungs in organ culture.



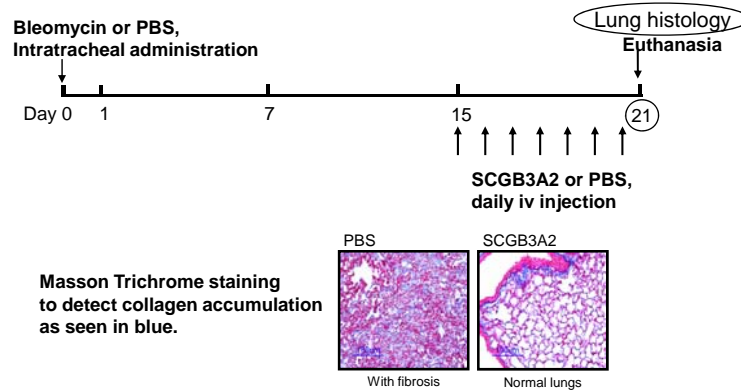
- promotes late stages of mouse fetal lung development when administered intravenously from embryonic day (E)13.5 through E16.5 to pregnant female mice.



Technology

- **SCGB3A2 suppresses/reduces bleomycin-induced damage:**
 - reduces DNA damage/cell death in mouse fetal lung primary culture cells.
 - reduces bleomycin-induced lung fibrosis in mouse model.

Experimental scheme in mouse model



Technology Applications

Based on SCGB3A2's three main activities:

- anti-inflammatory
- growth factor
- anti-DNA damage/cell death (at least by bleomycin)

SCGB3A2 may be used

- to promote development of underdeveloped lungs.
- to suppress/reduce development of bleomycin-induced lung fibrosis (interstitial pneumonia).

SCGB3A2 may be applicable in the field of emphysema and lung cancer.

Commercial Applications

SCGB3A2 can be used as a reagent:

- **To treat preterm infants with problems associated with underdeveloped lungs.**
 - through iv injection to a pregnant mother.
 - direct administration to preterm infants through iv, intratracheal intubation, or inhalation.
- **To suppress/reduce development of bleomycin-induced lung fibrosis, which is frequently seen during cancer chemotherapy using bleomycin.**
 - through iv injection.

Collaboration Opportunities

CRADA opportunities:

- **To study the effect of SCGB3A2 on lung development using larger animals such as lamb, sheep, and primate.**
- **To study the effect of SCGB3A2 on suppression/reduction of bleomycin-induced fibrosis using larger animals.**
- **To study whether SCGB3A2 plays a role in development of emphysema using smoking model mouse or larger animals.**

Contact Information

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