



○ Innovative Science

○ Breakthrough Therapies

○ Clinical Advances

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



TEDCO/NIH/NCI Technology Showcase

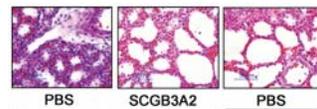
Shioko Kimura  
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### Technology



- 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.

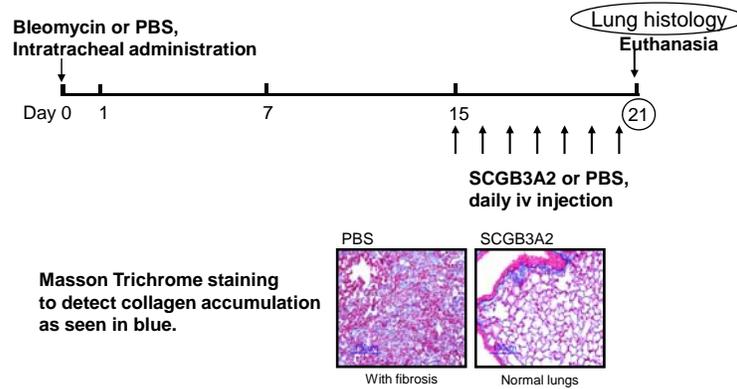


E19.0  
(right before birth)

## 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.**

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