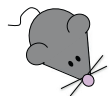


Experimental dose

Mouse model



10 μg

Mouse alveolar area $\sim 500 \text{ cm}^2$

Culture dose



0.02 $\mu\text{g}/\text{cm}^2$

Human extrapolation



Human alveolar area $\sim 100 \text{ m}^2$

Only 30% deposit



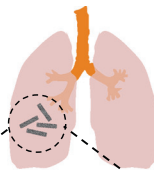
60 mg/lung

Average CNT level 10 $\mu\text{g}/\text{m}^3$

Working day inhalation 10 m^3

3 working years

Lung biopersistence



6 Months



Human lung epithelial cells



Malignant transformation

Isolate



Stem-like cells

Tumor suppressor p53



Self-renewal

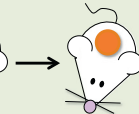


Apoptosis resistance



Migration & invasion

In vitro aggressiveness



In vivo tumorigenic

Stem cell markers

Nanog $\uparrow$
SOX-2 $\uparrow$
SOX-17 $\uparrow$
E-cadherin $\downarrow$

Surface markers

CD24 $\downarrow$
CD133 $\uparrow$