High-fat Western diet alters crystalline silica-induced airway epithelium ion transport but not airway smooth muscle reactivity

Data Dictionary

Field name	Field contents
ID	Identification number of animals in the study
Diet	Type of food given to the animal
STD	Standard rat chow diet
HFWD	High-fat Western diet
Exposure	Silica (SIL) or air exposure
Time (wk)	Week post-exposure to silica or filtered air
0 wk	0-week post-exposure to silica or air exposure treatment
4 wk	4-week post-exposure to silica or air exposure treatment
8 wk	8-week post-exposure to silica or air exposure treatment
h	Hour
d	Day
mL	Milliliter
mg	Milligram
cm	Centimeter
g	Gram
wk	Week
EL Response	Contractile response in (cm H2O) to MCh following administration to the extraluminal (EL) bath of the isolated, perfused trachea preparation
IL Response	Contractile response to MCh in (cm H2O) following administration to the intraluminal (IL) bath of the isolated, perfused trachea preparation
MCh (Methacholine)	An agonist drug that stimulates airway smooth muscle to contract and cause bronchoconstriction. Causes an increase in airway resistance
Airway smooth muscle	The muscle surrounding airways that is contracted by methacholine
Airway epithelium	A tissue containing several types of cells that lines the airways and has a barrier function. It also is responsible for hydration of the airways and clearance of agents from the lungs
Reactivity	A term used to describe how sensitive a tissue or organ responds to a provocative agent that causes a response
-log[MCh (M)]	Negative $\log_{10}$ of the molar MCh concentration
M	Molar units defined as grams/ml
Ussing chamber	Apparatus used to measure airway epithelial ion transport
BASAL	Baseline measure prior to addition of agent
Ouabain (OUAB)	Inhibitor of the Na^+,K^+-pump
Amiloride (AMIL)	Inhibitor of Na^+ channels
5-nitro-2-(3-phenylpropyl-amino) benzoic acid (NPPB)	Chloride channel inhibitor

PD	Potential difference across airway epithelium
Agent	Pharmacological inhibitor, either amiloride or ouabain
I_{sc} (μA/cm^2)	Short circuit electrical current across epithelium due to electrogenic ion transport, and its units
R_t (Ohms/cm^2)	Electrical resistance to ion flow across the epithelium through tight junctions, and its units
Frequency	Pulses per second or Hz
H20	water