

**AIRBORNE PARTICULATE MATTER INHIBITS ALVEOLAR FLUID
REABSORPTION IN MICE VIA OXIDANT GENERATION**

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Characteristics of the particulate matter.

The particulate matter was provided to us by Dr. Andy Ghio (Table E1). It was collected by baghouse from ambient air in Dusseldorf, Germany. The particle sample was aerosolized from a turntable into a small-scale powder

Elemental analysis (% ± SD)	Metal (ppm ± SD)
<i>Carbon (19.7 ± 2.34%)</i>	<i>Cobalt (103 ± 13 ppm)</i>
<i>Hydrogen (1.4 ± 0.3%)</i>	<i>Copper (48 ± 10 ppm)</i>
<i>Nitrogen (<0.05%)</i>	<i>Chromium (104 ± 23 ppm)</i>
<i>Oxygen (14.12 ± 1.56%)</i>	<i>Iron (14,521 ± 572 ppm)</i>
<i>Sulfur (2.09 ± 0.55%)</i>	<i>Manganese (21 ± 37 ppm)</i>
<i>Ash (63.24 ± 4.19%)</i>	<i>Nickel (1519 ± 158 ppm)</i>
	<i>Titanium (131 ± 45 ppm)</i>
	<i>Vanadium (2767 ± 190 ppm)</i>
Table E1. Characteristics of the particulate matter	

disperser utilizing a high airflow to break up aggregates in the venturi throat. The outlet of the aerosol generator was attached directly to an aerodynamic particle sizer and the aerosol was sampled on four occasions for 20 seconds. Data were expressed as the average mass median aerodynamic diameter from the four replicate samples. Ionizable concentrations of metals associated with the particle was measured by agitation in 1.0 N HCl (1.0 mg/1.0 ml) for 1 hour at room temperature, centrifuged for 1 hour at 1200 g, and the supernatant removed for analysis. Metals were individually analyzed in duplicates. As can

be seen the particles are largely composed of ash and carbon and are highly enriched in iron (E1).

REFERENCES

E1. Upadhyay D, Panduri V, Ghio A, Kamp DW. Particulate matter induces alveolar epithelial cell DNA damage and apoptosis: role of free radicals and the mitochondria. *Am J Respir Cell Mol Biol* 2003;29(2):180-187.