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Effect of Diesel Exhaust Particulate and Transition Metal on Cytotoxicity and Biomolecule in A549 Lung Epithelial Cells

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Diesel exhaust particles (DEP) from diesel engine powered cars and trucks, which contain a broad spectrum of polycyclic aromatic hydrocarbons (PAH), are common atmospheric pollutants derived from diesel engine powered cars and trucks. Controlled human exposure studies have shown that DEP induces an acute inflammatory response in human the airways and exert adverse effects on the pulmonary functions. The MTS method was used first to evaluate the cytotoxicity of Diesel exhaust particle (DEP) and transition metals (Zn, Al, Ni, Ag). Also this particles could investigate whether induce DNA damage and protein carbonyl formation. In conclusion, each transition metal affects differently lung epithelial cells and characterization of DEP can be used as a preliminary criterion of particle cytotoxicity in vitro.

Keyword: Diesel exhaust particle, transition metals, cytotoxicity, DNA damage