

Poster Abstracts

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PROTECTIVE EFFECT OF RECOMBINANT HUMAN PARAOXONASE K192 ON LUNG INJURY INDUCED BY CHLORPYRIFOS POISONING

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[Abstract]

Objective To explore if the (rHuPON1 K192) can protect acute lung injury in Sprague-Dalway (SD) rats induced by chlorpyrifos (CPF) poisoning.

Methods 30 healthy male adult SD rats were randomly divided into normal control group (Group A), the pretreatment Group (Group B), the infected Group (Group C), 10 rats in each group. The rats in Group C were given chlorpyrifos by gavage 330mg/kg (2LD₅₀) to establish organophosphate poisoning model, group A accepted normal saline and group B caudal intravenously rHuPON1K192 (9000U/kg) 30 minutes ahead of exposure by pretreatment. 8 hours later, blood and lung tissue samples were collected for testing. Determination of serum levels of nuclear factor-Kappa B (NF-κB), Super Oxide Dismutase (SOD), malonaldehyde (MDA) and pulmonary coefficient to observe the changes of the lung histopathology and electron microscopy.

Results Group B compared with Group C, SOD activity increase and MDA content increase in serum, NF-κB activity of lung tissue decrease. Lung tissue of Group A appeared normal under light microscope and electron microscope. While in Group C the lung tissue appeared heavier degree of neutrophil infiltration, lung edema, alveolar septal thickening, erythrocyte aggregation in the alveolar under light microscope, swelling, bubbling, cracking of the cytoplasm of the epithelial cells, chromatin coagulation and fragmentation under electron microscopy. The above changes of rats is lighter in Group B. Conclusion rHuPON1 K192 can relieve lung injury from acute chlorpyrifos poisoning, play a protective role in lung injury.

Key Words : organophosphate poisoning, chlorpyrifos, recombinant human paraoxonase, acute lung injury, NF-κB