Acute Inhalation Toxicity of T-2 Mycotoxin in the Rat and Guinea Pig

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Abstract

In this study, concentration-response parameters were determined for rats and guinea pigs systematically exposed to an aerosol of T-2 toxin. The LC50 for a 10-min exposure to T-2 toxin aerosol was 0.02 mg T-2/liter air for rats and 0.21 mg T-2/liter air for guinea pigs. Data from total T-2 deposition in rats and guinea pigs exposed to their respective LC50 aerosol concentration gave an LD50 of 0.05 mg T-2/kg body weight for the rat and 0.4 mg T-2/kg body weight for the guinea pig. These data show that inhaled T-2 toxin is approximately 20 times more toxic to the rat (0.05 mg T-2/kg body wt inhaled vs 1.0 mg T-2/kg body wt ip) and at least twice as toxic to the guinea pig (0.4 mg T-2/kg body wt inhaled vs 1-2 mg T-2/kg body wt ip) than ip administered T-2 toxin. Histopathologic examination of major organs in both the rat and guinea pig after respiratory exposure to T-2 toxin indicated that lesions were similar to those described after systemic administration of the toxin. Gross and microscopic alterations of respiratory tract tissue after T-2 aerosol exposure were minimal and could not account for the increase in toxicity.

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