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Acute inhalation toxicity of T-2 mycotoxin in mice.

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Abstract

Experiments were conducted to study the acute inhalation toxicity of T-2 mycotoxin in both young adult and mature mice. For a 10-min aerosol exposure, the 24-hr LC50 of T-2 mycotoxin in young adult mice was 0.08 +/- 0.04 mg T-2/liter air and that for mature mice was 0.325 +/- 0.1 mg T-2/liter air. Deaths among mice exposed to the higher aerosol concentrations used in this study (i.e., 1.5 to 2.4 mg T-2/liter air) occurred in less than 5 hr. General clinical symptoms in these animals immediately postexposure were tremors, lethargy, stilted gait, and, in some animals, prostration. In experiments separate from the concentration-response studies, total deposition of T-2 aerosol and selective retention of T-2 in the respiratory tract and nasal turbinates were determined analytically from 3H-labeled T-2. When total deposition of T-2 was quantitated, there was excellent agreement between that amount of T-2 deposited and that amount of T-2 predicted from calculations based on aerosol size and animal minute volume. Based on the aerosol deposition data, the LD50 values of T-2 mycotoxins was 0.24 mg/kg for young adult mice and 0.94 mg/kg for mature mice. For mice, inhalation of T-2 mycotoxin is at least 10 times more toxic than systemic administration (LD50 approximately 4.5 mg/kg) and at least 20 times more toxic than dermal administration (LD50 greater than 10 mg/kg).

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