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Mutagenicity of Alkylhydrazine Oxalates in *Salmonella typhimurium* TA 100 and TA 102 Demonstrated by Modifying the Growth Conditions of the Bacteria

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Alkylhydrazines are important carcinogens. However, they show generally only weak mutagenicity and the activities reported from different laboratories are contradictory. We have developed a sensitive method to detect the mutagenicity of alkylhydrazines. The method is based on a modified preculturing procedure in the Ames test, the emphasis in the modification being a change in the growth period of tester strains. The optimal growth periods were found to be 11 h in *Salmonella typhimurium* TA 100 and 5 h in *Salmonella typhimurium* TA 102. We tested the mutagenic activity of 12 alkylhydrazines; 1,2–dimethylhydrazine, 1,2–diethylhydrazine, 1,2–dipropylhydrazine, 1,2–dibutylhydrazine, 1,1–dimethylhydrazine, 1,1–diethylhydrazine, 1,1–dipropylhydrazine, 1,1–dibutylhydrazine, methylhydrazine, ethylhydrazine, propylhydrazine, and butylhydrazine. All 12 alkylhydrazines were clearly mutagenic in *Salmonella typhimurium* TA 102, and 10 hydrazines were mutagenic in *Salmonella typhimurium* TA 100, both in the absence of S9 mix. The mutagenicity was inhibited by the addition of S9 mix or bovine serum albumin. This suggests deactivation of the mutagens by proteins.

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