CASE

PM

CHEM Chlorsulfuron (formerly DPX-W4189)

BRANCH Toxicology DISC TOPIC Mutagenicity

002654

FORMULATION Technical

FICHE/MASTER ID

CONTENT CAT

Mutagenic Activity of Benzenesulfonamide, 2-Chloro-N-[(4-Methoxy-6-Methyl-1, 3, 5-Triazin-2-yl)-Aminocarbonyl]- in the Salmonella/Microsome Assay
Haskell Laboratory Report No. 121-77
MR No. 0581-629
J. F. Russell, Jr. March 4, 1977

SUBST. CLASS =

OTHER SUBJECT DESCRIPTORS

DIRECT RVW TIME = 2 hours START-DATE END DATE

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Conclusions:

A. This study is scientifically valid.
B. Chlorsulfuron, at concentratios of up to 30 mg/petri plate, in the presence or absence of a liver microsomal system was not mutagenic in Salmonella typhimurium strains TA 98, TA 100, TA 1535, TA 1537, or TA 1538.
C. This study generally conforms to EPA Proposed Guidelines in Section 163.84-2 (Federal Register 43: 37389, 8/22/78).

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Methods:

Histidine-requiring strains of Salmonella typhimurium were used in petri plate assays (about $10^8$ bacteria, 37°C, 48 hours). TA 1535 and TA 100 were used to detect substitutions; TA 1537, TA 1538, and TA 98 were used to detect frameshifts. Preliminary cytotoxicity was determined. All testing was in duplicate.

The toxicity assessment is performed with $10^3$ bacterial cells per plate, and is used only to generate an initial concentration range for mutagenicity assessment (in which $10^8$ cells are plated). Because the toxicity response at these two densities may differ, these results are not reported. We currently test at least one concentration in the mutagenicity assay which shows a toxic response indicated either by a significant decrease in number of revertants, or by a thinning of the background lawn.

The activation system contained 5-9 liver homogenate fractions from Aroclor 1254 treated rates (500 mg/kg). Positive control with the activated system was 2-aminoathracene. Positive controls without the activation system were MNNG, 9-aminoacridine and 2-nitrofluorene. DMSO was the solvent and served as the negative control.

Results:

Chlorsulfuron in duplicate analyses, with or without activation at 6, 12, 18, 21, and 30 mg/plate failed to produce an increase in the histidine revertants/plate. Positive controls produced at least a 10-fold increase compared to negative controls.

Discussion:

The study was conducted by acceptable methods and the collected data support the reported conclusions.

Cytotoxicity results were not given; however, these were preliminary experiments done to determine concentrations for the definitive study.

There is no evidence that increased incubation time will cause a change in the negative results obtained.

The genotypes of the tester strains were checked before freezing down each lot. Standard range of spontaneous revertants was not stated.