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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

dw. 10/16/79

DATE: October 15, 1979

SUBJECT: EPA #239-2186; Ortho Paraquat CL; Rat Bone-Marrow, Cytogenetic Study using 100% Paraquat Dichloride from ICI, England, Submitted to the TOX Files. Caswell #634

FROM: D. Ritter, Toxicologist
Toxicology Branch/HED (TS-769) DR 10/16/79

TO: TOX Files

This study was performed at ICI Limited in England and is dated 7/5/78. Report No. CTL/P/367

Cytogenetic Study in the Rat

Methods:

Paraquat dichloride was administered by gavage in an aqueous solution containing 0.5% "Tween" 80 to groups of eight male Wistar rats each at levels equivalent to 0 (solvent control), 6.5 mg/kg, 12.5 mg/kg, 19.0 mg/kg or 200 mg/kg ethylmethanesulfonate, EMS (positive control) for five consecutive days. The rats were killed six hours after the final dose, having been dosed two hours previously with 3 mg/kg IP colchicine to stop dividing cells at metaphase. Bone marrow cells were obtained by aspirationand prepared for microscopic examination by routine procedures and were examined for chromosome breaks, chromosome or chromatid gaps, fragments and any other abnormality, such as translocations. At least fifty cells per animals were to be scored.

Results:

Statistical analyses of results revealed no dose related effects due to paraquat; EMS treated animals had some chromosomal abnormalities. Negative control values were not notably different from the treated animals. The authors claimed that some difficulty was encountered due to artifacts resulting from slide preparation; however, this was not of sufficient magnitude to invalidate the study.

Conclusions:

Pure Paraquat CL did not cause bone marrow cell chromosome abnormalities at levels up to 19.0 mg/kg/day when administered by gavage for five consecutive days to the male Wistar rat under the conditions of this study. 19 mg/kg was the highest dose level.

CORE Evaluation:

The study is rated as CORE MINIMUM data in quality (CORE contains no specific requirements for cytogenetic assays).

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RC W. Mueller

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