

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
DEPARTMENT OF PESTICIDE REGULATION
MEDICAL TOXICOLOGY BRANCH

SUMMARY OF TOXICOLOGY DATA
TETRAGLYCINE HYDROPERIODIDE

Chemical Code # 001923 Tolerance # 51688

Original date: 8/16/02

I. DATA GAP STATUS

Combined, rat :	Data gap, study not submitted
Chronic toxicity, rat:	Data gap, study not submitted
Chronic toxicity, dog:	Data gap, study not submitted
Oncogenicity, rat:	Data gap, study not submitted
Oncogenicity, mouse:	Data gap, study not submitted
Reproduction, rat:	Data gap, study not submitted
Teratology, rat:	Data gap, study not submitted
Teratology, rabbit:	Data gap, study not submitted
Gene mutation:	Data gap, study inadequate, no adverse effect indicated
Chromosome effects:	Data gap, study inadequate, possible adverse effect indicated
DNA damage:	Data gap, study inadequate, no adverse effect indicated
Neurotoxicity:	Not required at this time.

Toxicology one-liners are attached.

All record numbers through 132582 in 51688-002 were examined.

** indicates an acceptable study.

Bold face indicates a possible adverse effect.

File name: T020816

Original by: Kishiyama and Gee, August 16, 2002

This active ingredient is registered in California to be added to human drinking water.

All of the following information was contained in a single document by J. A. Macko, Jr., Toxicology Division, U. S. Army Environmental Hygiene Agency, Aberdeen Proving Ground, MD. The study, 75-51-0742-91, was conducted between January, 1988, and August 1991, with a final report date of 1991. Several of the genotoxicity studies were conducted under contract, as noted for the individual one-liners. All studies were reported in summary form so that none are acceptable as reported. It is unknown whether any would be evaluated as adequate if the full reports were submitted for review. (Gee, 8/13/02)

II. TOXICOLOGY ONE-LINERS AND CONCLUSIONS

These pages contain summaries only. Individual worksheets may contain additional effects.

COMBINED, RAT

No study submitted

CHRONIC TOXICITY, RAT

No study submitted

CHRONIC TOXICITY, DOG

No study submitted

ONCOGENICITY, RAT

No study submitted

ONCOGENICITY, MOUSE

No study submitted

REPRODUCTION, RAT

No study submitted

TERATOLOGY, RAT

No study submitted

TERATOLOGY, RABBIT

No study submitted

GENE MUTATION

002 132582 Macko, Jr., J. A. "*Salmonella Typhimurium*/Microsome Reverse Mutation Assay: Plate Incorporation Method [Integrated Laboratory Systems (ILS)]." (Integrated Laboratory Systems, Project No. ILS RO31, 1991.) Technical Grade Tetraglycine Hydroperiodide was evaluated for mutagenicity at 5 concentrations up to 1 mg and to 0.1 mg/plate with and without S9 Mix, respectively. *Salmonella typhimurium* tester strains were TA 1535, TA1537, TA1538, TA98 and TA100. There were triplicate plates per concentration. No data. Positive controls were not identified. UNACCEPTABLE (a complete study report is required for review). (Kishiyama and Gee, 8/12/02).

002 132582 Macko, Jr., J. A. "Mouse Lymphoma Mutation Assay." (Integrated Laboratory Systems, Project No. ILS R031, 1991). Technical Grade Tetraglycine Hydroperiodide was tested

at concentrations from 2.7 to 200 µg/ml and from 134 to 10,000 µg/ml with and without metabolic activation, respectively, for mutagenic potential using L5178Y mouse lymphoma cells. There was apparently a single culture and a single trial per concentration. No data. Length of exposure was not stated. The author reported that treatment with TGHP with and without metabolic activation did not induce mutations at the thymidine kinase locus of L5178Y mouse lymphoma cells. UNACCEPTABLE (a complete study report is required for review). (Kishiyama and Gee, 8/13/02).

CHROMOSOME EFFECTS

002 132582 Macko, Jr., J. A. "Chromosomal Aberration Frequency Assay." (Integrated Laboratory Systems, Project No. ILS R031, 1991.) Technical Grade Tetraglycine Hydroperiodide was tested at concentrations of 0, 3, 30, 60, 300 and 600 µg/ml with rat liver activation and at 30, 60, 300 and 600 µg/ml without metabolic activation for the potential to induce structural chromosome aberrations in Chinese (CHO) ovary cells. Concentrations were based on a preliminary toxicity study up to 1000 µg/ml with complete lack of growth with and without activation. Incubation in the aberration assay with activation was for 2 hours followed by an additional 8 hours and for 8 hours without activation. There were duplicate cultures per concentration with at least 100 metaphases scored per concentration. **TGHP with metabolic activation induced a significant increase in the percentage of metaphase cells with chromosomal aberrations** (from a text statement, no data). Positive controls were functional. UNACCEPTABLE (no data, a complete study report is required for review). (Kishiyama and Gee, 8/13/02).

DNA DAMAGE

002 132582 Macko, Jr., J. A. "Unscheduled DNA Synthesis Assay." (SRI International, SRI Project No. LSC-7593, 1991) Technical Grade Tetraglycine Hydroperiodide was evaluated at concentrations ranging from 10 to 750 µg/ml for induction of DNA damage with primary rat hepatocytes *in vitro*. Concentration of 1000 µg/ml was toxic. The author reported that TGHP was negative with the mean net grains/nucleus between -10.2 and -14.2 with a low percent in repair. No evidence for the induction of unscheduled DNA synthesis from the study as conducted. UNACCEPTABLE (a complete study report is required). (Kishiyama and Gee, 8/13/02).

MISCELLANEOUS

002 132582 Macko Jr., J. A. "Primary Skin Irritation Studies." (U.S. Army Environmental Hygiene Agency, Study No. 75-51-0742-91, August 1991.) Tetraglycine hydroperiodide (lot 10704, 40.63 mg titratable iodine) was administered as a single 24-hour dermal exposure at 0.5 gm (paste: powder moistened with water) to 6 New Zealand White rabbits, three intact and three abraded. Treatment site irritation (slight erythema and edema) was present until 72 hours, but

absent at 7 days. Toxicity Category IV. UNACCEPTABLE (insufficient information). (Kishiyama and Gee, 8/12/02).

002 132582 Macko Jr., J. A. "Eye Irritation." (U.S. Army Environmental Hygiene Agency, Study No. 75-51-0742-91, 1991.) Tetraglycine Hydroperiodide (technical, lot 10704, 40.63 mg titratable iodine) was administered as a single 0.1 gm (powder) dose to one eye for each of 6 New Zealand White rabbits. The treated eye was washed 24 hours after treatment. Eyes were scored at 24, 48 and 72 hours and 7, 14 and 21 days. **TGHP injury to the cornea, conjunctiva and iris was generally present at study termination (21 days). Category I. UNACCEPTABLE .** Upgradeable (insufficient information). (Kishiyama and Gee, 8/12/02).

002 132582 Macko Jr., J. A. "Sensitization." (U.S. Army Environmental Hygiene Agency, Study No. 75-51-0742-91, 1991.) Tetraglycine hydroperiodide (technical, lot 10704, 40.63 mg titratable iodine) was administered as a 0.1 percent solution in 80% ethanol, 0.3 ml, to Webril[®] patches applied to the shaved flanks of 10 guinea pigs (not clear if male or female). Application was for 6 hours once a week for three applications followed by two weeks rest and a challenge dose (dose not clear). Effects were scored at 24 and 48 hours post-challenge. The positive control was DNCB. The author reported irritation scores for the TGHP challenge treatment were no greater than the initial scores. However, positive control scores after the challenge dose greatly increased. The author concluded the results indicated a lack of sensitizing potential for TGHP. UNACCEPTABLE (insufficient information, no data). (Kishiyama and Gee, 8/12/02).

002 132582 Macko Jr., J. A. "Acute Oral Study." (U.S. Army Environmental Hygiene Agency, 1991.) Tetraglycine hydroperiodide (technical, lot 10704, 40.63 mg titratable iodine) was administered via gavage in a single dose as a 100 mg/ml aqueous slurry to male Sprague-Dawley rats followed by a 14-day observation period. The number of animals and volumes were unspecified. Reported LD₅₀ = 838 mg/kg (736-952 mg/kg) and Toxicity Category III . Prostration and bloody nasal discharge was seen at all lethal doses with necrotic tail tips above 500 mg/kg. UNACCEPTABLE (No data). (Kishiyama and Gee, 8/12/02).