



Name: 2,3,4,4'-Tetrahydroxybenzophenone / 31127-54-5

Legal entity owner: National Institute of Health Sciences / Tokyo / Japan

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2,3,4,4'-Tetrahydroxybenzophenone

CORE

General information

Identification

SUBSTANCE: 2,3,4,4'-Tetrahydroxybenzophenone

UUID: IUC5-240cac4f-f27d-4ed7-ab4d-9fde7ed35f68

Dossier UUID:

Author: SuperUser

Date: 2016-12-21T15:06:08.000+09:00

Remarks:

Substance name

2,3,4,4'-Tetrahydroxybenzophenone

Legal entity

[National Institute of Health Sciences / Tokyo / Japan](#)

Identification of substance

Reference substance

[2,3,4,4'-Tetrahydroxybenzophenone / 31127-54-5](#)

EC number

EC name

CAS number

CAS name

31127-54-5

IUPAC name

Role in the supply chain

Manufacturer

false

Importer

false

Only representative

false

Downstream user

false

OECD

Health Effects

Acute toxicity: oral

ENDPOINT_STUDY_RECORD: Acute toxicity: oral.001

UUID: IUC5-81f8cc24-0026-4622-bd2a-06850fde77f0

Dossier UUID:

Author: SuperUser

Date: 2017-02-15T16:02:42.000+09:00

Remarks:

Administrative data

Endpoint

acute toxicity: oral

Type of information

experimental study

Adequacy of study

key study

Robust study summary

false

Used for classification

false

Used for SDS

false

Reliability

1 (reliable without restriction)

Rationale for reliability incl. deficiencies

other: OECD Test Guideline study under GLP condition

Data source

Reference

[Single Dose Oral Toxicity Test of 2,3,4,4'-Tetrahydroxybenzophenone in Rats / MHLW / publication](#)

Data access

data published

Materials and methods

Test guideline

Qualifier

according to

Guideline

OECD Guideline 423 (Acute Oral toxicity - Acute Toxic Class Method)

Test material

Test material information

31127-54-5

Test animals

Species

rat
common species

Strain

other: Crl:CD(SD)

Sex

female

Details on test animals and environmental conditions**TEST ANIMALS**

- Source :Charles River Japan Inc.
- Age at study initiation: 6 weeks old
- Weight at study initiation: Females, 123-135 g
- Fasting period before study: Approximately 16 hrs
- Housing:1/cage
- Diet (e.g. ad libitum): Ad libitum except fasting period for 16 hrs before administration to 6 hrs after administration
- Water (e.g. ad libitum):Ad libitum
- Acclimation period:7 days

ENVIRONMENTAL CONDITIONS

- Temperature (°C): 23±3 °C(actual temperature: 21-25°C)
- Humidity (%):50 ± 20% (actual humidity: 40-59%)
- Air changes (per hr): Approximately 10-15 times/hr
- Photoperiod (hrs dark / hrs light):12 hrs light / 12 hrs dark

Administration / exposure

Route of administration

oral: gavage

Vehicle

corn oil

Details on oral exposure

- Amount of vehicle (if gavage):10 ml/kg bw

Doses

2000 mg/kg bw

No. of animals per sex per dose

3 (1st step group) and 3 (2nd step group)

Control animals

no

Details on study design

- Duration of observation period following administration: 14 days

- Frequency of observations: nearly successive observation (from time just to 1 hr after administration) and observation of every 2 hr (from 2 hr – 6 hr after administration) (day 0); once a day (from day 1-day14)
- Frequency of weighing : just before administration (day 0), and 1,3,7 and 14 day after administration
- Necropsy of survivors performed: yes

Results and discussion

Effect levels

Key result

false

Sex

female

Dose descriptor

LD50

Effect level

> 2000

mg/kg bw

Mortality

No deaths were observed in any group.

Clinical signs

No changes related to the test substance were observed in any group.

Body weight

No changes related to the test substance were observed in any group.

Gross pathology

No changes related to the test substance were observed in any group.

Any other information on results incl. tables

Figures and Tables (in English) are available in the following full report of the study.

http://dra4.nihs.go.jp/mhlw_data/home/pdf/PDF31127-54-5a.pdf

Applicant's summary and conclusion

Executive summary

The acute oral median lethal dose (LD50) for 2,3,4,4'-tetrahydroxybenzophenone was established at > 2,000 mg/kg bw in female rats on the basis of a study conducted according to the Organisation for Economic Co-operation and Development Test Guideline (OECD TG) 423. The substance caused no deaths or clinical signs of toxicity at 2,000 mg/kg bw.

Repeated dose toxicity: oral

ENDPOINT_STUDY_RECORD: Repeated dose toxicity: oral.001

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Dossier UUID:

Author: SuperUser

Date: 2017-02-15T16:04:12.000+09:00

Remarks:

Administrative data

Endpoint

short-term repeated dose toxicity: oral combined repeated dose and reproduction / developmental screening

Type of information

experimental study

Adequacy of study

key study

Robust study summary

false

Used for classification

false

Used for SDS

false

Reliability

1 (reliable without restriction)

Rationale for reliability incl. deficiencies

other: GLP guideline study

Cross-reference

Reason / purpose

reference to same study

Remarks

7.8.1 Reproductive/developmental toxicity.001

Data source

Reference

[Combined repeat dose and reproductive/developmental toxicity screening test of 2,3,4,4'-Tetrahydroxy... / MHLW Japan / study report](#)

Data access

data published

Materials and methods

Test guideline

Qualifier

according to

Guideline

OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)

Deviations

no

GLP compliance

yes

Limit test

no

Test material

Test material information

[31127-54-5](#)

Test animals

Species

rat

common rodent species

Strain

other: Crl: CD(SD)

Sex

male/female

Details on test animals and environmental conditions**TEST ANIMALS**

- Source: Charles River Laboratories Japan, Inc. Atsugi
- Age at study initiation: 10 weeks
- Weight at study initiation: Males: 335-391 g; Females: 202-249 g
- Housing: Steel wire-mesh cage (250 mm x 350 mm x 200 mm)
- Diet: ad libitum
- Water: ad libitum
- Acclimation period: 14 days

ENVIRONMENTAL CONDITIONS

- Temperature (°C): 21-23
- Humidity (%): 46-61
- Air changes: 10-15 times / hr
- Photoperiod: 12 hrs dark / 12 hrs light

Administration / exposure

Route of administration

oral: gavage

Vehicle

corn oil

Details on oral exposure

PREPARATION OF DOSING SOLUTIONS:

VEHICLE

- Amount of vehicle (if gavage): 5 mL/kg bw
- Lot/batch no. (if required): SDE2487

Duration of treatment / exposure

(P) Males: 42 days including 14 days pre-mating and mating periods, and thereafter 14 days (P)

Females: 42-55 days including 14 days pre-mating, mating and gestation periods, and the days until day 4 of lactation; satellite animals: 42 days.

Frequency of treatment

Once/day, 7days/week

Doses / concentrations

Remarks

Doses / Concentrations:

0 (vehicle), 100, 300, and 1000 mg/kg bw/day

Basis:

actual ingested

No. of animals per sex per dose

12 animals/sex/dose as a main dose group,

5 males and 5 females at 0 and 1000 mg/kg bw/day as a satellite group (without mating)

Control animals

yes, concurrent vehicle

Details on study design

- Dose selection rationale: Doses in this test were set based on the results of the following study:

14-day repeated dose oral toxicity test (doses: 100, 300, and 1000 mg/kg bw/day). In the 14-day repeated dose oral toxicity test, abnormalities were observed in animals in the 1000 mg/kg bw/day group, such as low values of body weight and food consumption and an increase in liver weight. No effects were observed at 300 mg/kg bw/day. On the basis of these effects, a dose level of 1000 mg/kg was selected as the maximum dose expecting to induce the toxic changes, and then dose levels of 300 and 100 mg/kg bw/day were selected as a middle dose and a minimum dose levels, respectively, in accordance with a common ratio of approximately 3.

- Rationale for animal assignment (if not random): Body weight-balanced randomization

- Post-exposure recovery period in satellite groups: 14 days

Examinations

Observations and examinations performed and frequency

CAGE SIDE OBSERVATIONS: Yes

- Time schedule:

Males and females: once before the start of administration, 3 times/day during the administration period, and once during the recovery period

DETAILED CLINICAL OBSERVATIONS: Yes

The functional observational battery testing (FOB) was performed on all animals. Among the measures in the FOB, detailed clinical observations were made before the initiation of dosing. Thereafter, in males of the main groups, detailed clinical observations were made once a week. Also in females of the main groups, detailed clinical observations were made once a week in pre-mating and mating periods thereafter, and then those were made on days 1,7,14 and 20 of gestation, and on day

4 of lactation. For the satellite group, detailed clinical observations were made once a week in dosing and recovery periods.

Sensory motor reflexes, forelimb and hindlimb grip strengths, and motor activity were measured on week 6 of administration period (main/recovery group animals) and week 2 of recovery period (recovery group animals).

BODY WEIGHT: Yes

- Time schedule for examinations: Males (main) & males and females (recovery group): Days 1, 4, 8, 11, 15, 22, 25, 29, 32, 36, 39, 42, and the day of necropsy (after ca. 16h-fasting) in dosing period

Males and females (recovery group): Days 1, 4, 8, 11, 14, and the day of necropsy (after ca. 16h-fasting) in recovery period

Females (main group): Twice a week during the precopulation period (days 1, 4, 8, 11, and 15); gestation days 0, 4, 7, 11, 14, 17, and 20; lactation days 0 and 4; and the day of necropsy (after ca. 16 h-fasting)

FOOD CONSUMPTION AND COMPOUND INTAKE (if feeding study):

- Food consumption: Yes

Males (main) & males and females (recovery group): Days 1, 4, 8, 11, 15, 32, 36, and 39 in dosing period

Males and females (recovery group): Days 1, 4, 8, 11, and 14 in recovery period

Females (main group): Days 1, 4, 8, 11, and 15; gestation days 1, 4, 7, 11, 14, 17, and 20; lactation days 2 and 4

OPHTHALMOSCOPIC EXAMINATION: No

HAEMATOLOGY: Yes

- Time schedule for collection of blood: Blood was collected on the day of necropsy

- Anaesthetic used for blood collection: Yes (ether)

- Animals fasted: Yes, 16-20h

- How many animals: 5 sex/dose/group

- Parameters checked in table were examined.

CLINICAL CHEMISTRY: Yes

- Time schedule for collection of blood: Same as hematology

- Animals fasted: Same as hematology

- How many animals: Same as hematology

- Parameters checked in table were examined.

URINALYSIS: Yes (males only)

- Time schedule for collection of urine: Day 36-37 in dosing period, day 8-9 in recovery period

- Metabolism cages used for collection of urine: No data

- Animals fasted: fasting and only water at libitum (4h-urine), no fasting (20h-urine)

Sacrifice and pathology

GROSS PATHOLOGY: Yes, whole organs and tissues (see tables)

HISTOPATHOLOGY: Yes (see tables)

Other examinations

Organ weight: Brain, thyroids (including parathyroids), thymus, heart, liver, spleen, kidneys, adrenals, testes, epididymis

Statistics

The data were analyzed for homogeneity of variance by the Bartlett test. If variances were homogeneous, data was analyzed by the Dunnett test, whereas heterogeneous data was analyzed by the Dunnett type mean rank test ($p < 0.05$, two-sided).

In the recovery test, these values of two groups were analyzed by F test. If variances were homogeneous, data was analyzed by the Student t-test, whereas heterogeneous data was analyzed by the Aspin-Welch t-test ($p < 0.05$, two-sided).

Results and discussion

Results of examinations

Clinical signs

effects observed, treatment-related

Mortality

mortality observed, treatment-related

Body weight and weight changes

effects observed, treatment-related

Food consumption and compound intake (if feeding study)

effects observed, treatment-related

Food efficiency

not examined

Water consumption and compound intake (if drinking water study)

not examined

Ophthalmological findings

not examined

Haematological findings

effects observed, treatment-related

Clinical biochemistry findings

effects observed, treatment-related

Urinalysis findings

effects observed, treatment-related

Behaviour (functional findings)

effects observed, treatment-related

Description (incidence and severity)

see clinical signs.

Organ weight findings including organ / body weight ratios

effects observed, treatment-related

Gross pathological findings

effects observed, treatment-related

Histopathological findings: non-neoplastic

effects observed, treatment-related

Histopathological findings: neoplastic

not examined

Details on results

CLINICAL SIGNS AND MORTALITY

Males: No dead or moribund animals were observed. Salivation was observed at 1000 mg/kg bw/day.

Females: After delivery (day 0 of lactation), one animal died at 1000 mg/kg bw/day.

Home cage observation: No effects.

In-the-hand observation: No effects.

Open field observation: No effects.

-Sensory motor reflexes:

Auditory response, approach response, touch response, tail pinch response, pupillary reflex, aerial righting reflex: No effects. Landing foot splay: High value in females at 1000 mg/kg bw/day (main group, day 4 of lactation)

-Forelimb and hindlimb grip strengths: Low value of hindlimb grip strength in males at 1000 mg/kg bw/day in the 6-week of dosing

-Motor activity: High value in females at 300 mg/kg bw/day (main group, day 4 of lactation) without dose-response relationship. In females, high value at 1000 mg/kg bw/day in the 6-week of dosing in the recovery group, but not in the main group at the same dose. (No toxicological effects)

BODY WEIGHT AND WEIGHT GAIN

Males: Low values of body weight gain was observed at 1000 mg/kg bw/day in main group.

Females: Low value of body weight gain was observed at 1000 mg/kg bw/day at the ends of pre-mating and gestation periods. Low value of body weight was observed at 300 mg/kg bw/day on day 4 of lactation.

At the end of recovery period, high value of body weight gain was observed in both sexes at 1000 mg/kg bw/day.

FOOD CONSUMPTION

Males: Low value of food consumption was observed at 1000 mg/kg bw/day on day 4 of dosing, and significant increase was observed on days 36-42.

Females: Low value of food consumption was observed at 1000 mg/kg bw/day on day 4 of dosing, high value on day 15 of dosing, and then low value on day 20 of gestation and day 2 of lactation. Low value of food consumption was observed at 300 mg/kg bw/day on day 4 of dosing and day 2 of lactation.

HAEMATOLOGY

Low values of RBC, Hb, Ht and MCHC, and high values of platelet, neutrophilic count and monocyte count were observed at 1000 mg/kg bw/day at the end of dosing. At the end of recovery period, low values of RBC and Hb, and high value of reticulocyte were observed in males at 1000 mg/kg bw/day. Other significant findings in the table were within the normal ranges of physiological variability.

CLINICAL CHEMISTRY

High value of inorganic phosphorus was observed at 300 mg/kg bw/day and more at the end of dosing. Other significant findings in the table were within the normal ranges of physiological variability.

URINALYSIS (only males; statistical analysis was not performed on qualitative items.)

Occult blood was observed in all administered males, and the degree of occult blood was enhanced in a dose-dependent manner. Dark yellow color was observed in each 2-3 males at 100 mg/kg bw/day and more.

ORGAN WEIGHTS

Low values of absolute and relative thymus weights were observed in females at 300 mg/kg bw/day and more at the end of dosing. High value of relative liver weight was observed in both sexes at 1000 mg/kg bw/day at the end of dosing, and in females at the end of recovery period. Other significant findings in the table were within the normal ranges of physiological variability.

GROSS PATHOLOGY

In the dead female at 1000 mg/kg bw/day, small sizes of spleen and thymus were observed.

Undernourishment of general descriptions was observed in one female at 1000 mg/kg bw/day. Dark discoloration of liver was observed in six males at 1000 mg/kg bw/day. Small size of thymus was observed in one female at 300 mg/kg bw/day, and in three females at 1000 mg/kg bw/day. Other findings in the table were considered to be incidental due to low frequency of appearance and/or pathological properties.

HISTOPATHOLOGY: NON-NEOPLASTIC

In the dead female at 1000 mg/kg bw/day, atrophy of white pulp in the spleen and atrophy of thymus were observed.

[At the end of dosing]

Cecum: Single cell necrosis of mucosal epithelial cells was observed in 4 males and 2 females at 100 mg/kg bw/day, in 3 males and 3 females at 300 mg/kg bw/day, and in 8 males and 7 females at 1000 mg/kg bw/day. Diffuse hyperplasia of mucosa was observed in 1 male and 1 female at 100 mg/kg bw/day, in 3 males and 4 females at 300 mg/kg bw/day, and in 7 males and 6 females at 1000 mg/kg bw/day.

Liver: Vacuolation of peripheral hepatocytes was dose-dependently decreased in males and females at 300 mg/kg bw/day and more.

Thymus: Atrophy was dose-dependently increased in females at 300 mg/kg bw/day and more.

[At the end of recovery period]

Cecum: Diffuse hyperplasia of mucosa was observed in one male at 1000 mg/kg bw/day.

Other findings in the tables were considered to be incidental due to low frequency of appearance and/or pathological properties.

Effect levels

Dose descriptor	
LOAEL	
Effect level	
100	mg/kg bw/day (actual dose received)
Based on test mat.	
Sex	male/female
Basis for effect level	other: effects on the cecum

Target system / organ toxicity

Key result	false
Critical effects observed	not specified

Any other information on results incl. tables

Figures and Tables (in English) are available in the following full report of the study.

http://dra4.nihs.go.jp/mhlw_data/home/pdf/PDF31127-54-5d.pdf

Applicant's summary and conclusion

Conclusions

Based on the effects on the cecum, the low observed adverse effect level (LOAEL) for repeated oral dosing was determined to be 100 mg/kg bw/day in male and female rats.

Executive summary

A combined repeated oral dose toxicity study with the reproduction/developmental toxicity screening test was performed according to OECD TG 422. Male and female rats (12 animals/sex/dose) were

administered 2,3,4,4'-tetrahydroxybenzophenone at 0, 100, 300, and 1,000 mg/kg bw/day. Males were dosed for 42 days, including a 14-day pre-mating and mating periods; females were dosed for 41–45 days, including a 14-day pre-mating, mating, and gestation periods and the time until day 4 of lactation. In addition, male and female rats (five animals/sex/dose) were administered 0 and 1,000 mg/kg bw/day for 42 days without mating and examined after a 14-day recovery period. At 1,000 mg/kg bw/day, one female died on day 0 of lactation, salivation was observed in males and a decreased body weight gain was observed in both sexes. Regarding hematology parameters, anemia was observed at the same dose in males. Clinical chemistry studies demonstrated increased inorganic phosphorus at 300 mg/kg bw/day and higher in males. In the thymus, decreased organ weight and atrophy were observed at 300 mg/kg bw/day and higher in females. In the cecum, single cell necrosis of mucosal epithelial cells and diffuse mucosal hyperplasia were observed at 100 mg/kg bw/day and higher in both sexes. In the liver, in both sexes, increased organ weight at 1,000 mg/kg bw/day and decreased vacuolation of the perilobular hepatocytes in a dose-dependent manner at 300 mg/kg bw/day and higher was observed. These changes tended to resolve after the recovery period. On the basis of the findings in the cecum, the LOAEL for repeated-dose toxicity of 2,3,4,4'-tetrahydroxybenzophenone was determined to be 100 mg/kg bw/day in male and female rats.

Genetic toxicity in vitro

ENDPOINT_STUDY_RECORD: Genetic toxicity in vitro.001

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Dossier UUID:

Author: SuperUser

Date: 2016-12-21T14:50:21.000+09:00

Remarks:

Administrative data

Endpoint

in vitro gene mutation study in bacteria Type of genotoxicity: gene mutation

Type of information

experimental study

Adequacy of study

key study

Robust study summary

false

Used for classification

false

Used for SDS

false

Reliability

1 (reliable without restriction)

Rationale for reliability incl. deficiencies

other: OECD Test Guideline study under GLP condition

Data source

Reference

[Reverse Mutation Test of 2,3,4,4'-Tetrahydroxybenzophenone on Bacteria. / MHLW, Japan / study report](#)

Data access

data published

Materials and methods

Test guideline

Qualifier

according to

Guideline

JAPAN: Guidelines for Screening Mutagenicity Testing Of Chemicals

Deviations

no

GLP compliance

yes

Type of assay

bacterial reverse mutation assay
in vitro gene mutation study in bacteria

Test material

Test material information

[31127-54-5](#)

Method

Species / strain

Species / strain

S. typhimurium TA 1535, TA 1537, TA 98 and TA 100
bacteria

Metabolic activation

with and without

Metabolic activation system

rat liver, induced by phenobarbital and 5,6-benzoflavone

Species / strain

E. coli WP2 uvr A
bacteria

Metabolic activation

with and without

Metabolic activation system

rat liver, induced by phenobarbital and 5,6-benzoflavone

Test concentrations with justification for top dose

-S9 mix: 1.56, 3.13, 6.25, 12.5, 25, 50 µg/plate (TA1537, TA98 strains),
62.5, 125, 250, 500, 1000, 2000 µg/plate (WP2uvrA strain),
and 31.3, 62.5, 125, 250, 500, 1000 µg/plate (TA100, TA1535 strains)
+S9 mix: 15.6, 31.3, 62.5, 125, 250, 500, 1000 µg/plate (all strains)

Vehicle

- Vehicle(s)/solvent(s) used: DMSO

Controls

Negative controls

no

Solvent controls

yes

True negative controls

no

Positive controls

yes

Positive control substance

other: -S9 mix: 2-(2-Furyl)-3-(5-nitro-2-furyl) acrylamide (TA 100, TA98 and WP2 uvrA), sodium azide (TA1535) and 9-aminoacridine hydrochloride (TA1537). +S9 mix: 2-aminoanthracene (all strains)

Details on test system and conditions

RANGE-FINDING/SCREENING STUDIES: Concentration: 20-5000 µg/plate

Cytotoxic conc.: [-S9mix] Yes; >50 µg/plate (TA 98, TA1537), >1000 µg/plate (TA100, TA1535), >2000 µg/plate (WP2uvrA), [+S9mix] No.

METHOD OF APPLICATION: Preincubation

DURATION

- Preincubation period: 20 min at 37 °C

- Exposure duration: 48 hrs

NUMBER OF PLATES: 3

NUMBER OF REPLICATIONS: 2

DETERMINATION OF CYTOTOXICITY

- Method: other: growth inhibition

Evaluation criteria

In any strain(s) tested with or without S9 mix, when the mean number of revertant colonies per plate increased twice more than that of the negative control and when the increase was shown to be dose-related and reproducible, the chemical was judged mutagenic.

Statistics

No.

Results and discussion

Test results

Key result

false

Species / strain

S. typhimurium TA 1535, TA 1537, TA 98 and TA 100
bacteria

Metabolic activation

with and without

Genotoxicity

negative

Vehicle controls valid

yes

Negative controls valid

not examined

Positive controls valid

yes

Remarks on result

other: all strains/cell types tested Migrated from field 'Test system'.

Key result

false

Species / strain

E. coli WP2 uvr A
bacteria

Metabolic activation

with and without

Genotoxicity

negative

Vehicle controls valid

yes

Negative controls valid

not examined

Positive controls valid

yes

Remarks on result

other: all strains/cell types tested Migrated from field 'Test system'.

Any other information on results incl. tables _____

Figures and Tables (in Japanese) are available in the following full report of the study.

http://dra4.nihs.go.jp/mhlw_data/home/pdf/PDF31127-54-5e.pdf

Applicant's summary and conclusion _____

Conclusions

Interpretation of results (migrated information):
negative

Executive summary

In a bacterial reverse mutation assay using *Salmonella typhimurium* TA100, TA1535, TA98, and TA1537 and *Escherichia coli* WP2uvrA (similar to OECD TG 471), 2,3,4,4'-tetrahydroxybenzophenone was negative with or without metabolic activation.

ENDPOINT_STUDY_RECORD: Genetic toxicity in vitro.002

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Dossier UUID:

Author: SuperUser

Date: 2017-02-15T16:04:52.000+09:00

Remarks:

Administrative data

Endpoint

in vitro cytogenicity / chromosome aberration study in mammalian cells Type of genotoxicity: chromosome aberration

Type of information

experimental study

Adequacy of study

key study

Robust study summary

false

Used for classification

false

Used for SDS

false

Reliability

1 (reliable without restriction)

Rationale for reliability incl. deficiencies

other: OECD Test Guideline study under GLP condition

Data source

Reference

[In Vitro Chromosomal Aberration Test of 2,3,4,4'-Tetrahydroxybenzophenone on Cultured Chinese Hamste... / MHLW, Japan / study report](#)

Data access

data published

Materials and methods

Test guideline

Qualifier

according to

Guideline

OECD Guideline 473 (In Vitro Mammalian Chromosome Aberration Test)
in vitro cytogenicity / chromosome aberration study in mammalian cells

Deviations

no

Qualifier

according to

Guideline

JAPAN: Guidelines for Screening Mutagenicity Testing Of Chemicals

Deviations

no

GLP compliance

yes

Type of assay

in vitro mammalian chromosome aberration test
chromosome aberration

Test material

Test material information

[31127-54-5](#)

Method

Target gene

Chromosome

Species / strain

Species / strain

other: Chinese hamster lung(CHL/IU) cells

Metabolic activation

with and without

Metabolic activation system

rat liver, induced by phenobarbital and 5,6-benzoflavone

Test concentrations with justification for top dose

-S9 mix (short-term treatment): 0, 19.5, 39.1, 78.1, 156, 313 ug/mL

+S9 mix (short-term treatment): 0, 39.1, 78.1, 156, 313, 625 ug/mL

-S9 mix (continuous treatment, 24 h): 0, 19.5, 39.1, 78.1, 156, 313 ug/mL

-S9 mix (continuous treatment, 48 h): 0, 2.44, 4.88, 9.77, 19.5, 39.1 ug/mL

[Confirmation test]

-S9 mix (short-term treatment): 0, 6.58, 9.88, 14.8, 22.2, 33.3, 50 ug/mL

+S9 mix (short-term treatment): 0, 205, 256, 320, 400, 500 ug/mL

Vehicle

- Vehicle(s)/solvent(s) used:DMSO

Controls

Negative controls

no

Solvent controls

yes

True negative controls

no

Positive controls

yes

Positive control substance

cyclophosphamide
mitomycin C

Details on test system and conditions

METHOD OF APPLICATION: Exposure duration: [continuous treatment]: 24 hrs [short-term treatment]: 6 hrs + 18 hr

SPINDLE INHIBITOR: Colcemid

NUMBER OF REPLICATIONS: 2

NUMBER OF CELLS EVALUATED: 200 cells / dose

DETERMINATION OF CYTOTOXICITY

- Method: relative total growth

Evaluation criteria

For the evaluation of the frequencies of structural aberrations and of polyploidy induced, the following criteria were employed.

Appearance incidence of cells with chromosomal aberrations: Negative (-): < 5%; equivocal (\pm): 5-10%; positive (+): > 10%.

Finally, the substance is positive when the incidence is considered to be dose-related and reproducible.

Statistics

not used.

Results and discussion

Test results

Key result

false

Species / strain

other: Chinese hamster lung (CHL/IU) cells

Metabolic activation

with

Genotoxicity

positive weakly

Cytotoxicity

yes 625 ug/mL

Vehicle controls valid

yes

Negative controls valid

not examined

Positive controls valid

yes

Key result

false

Species / strain

other: Chinese hamster lung (CHL/IU) cells

Metabolic activation

without

Genotoxicity

negative

Cytotoxicity

yes 313 ug/mL (short), 78.1 ug/mL and more (continuous)

Vehicle controls valid

yes

Negative controls valid

not examined

Positive controls valid

yes

Any other information on results incl. tables _____

Figures and Tables (in English) are available in the following full report of the study.

http://dra4.nihs.go.jp/mhlw_data/home/pdf/PDF31127-54-5f.pdf

Applicant's summary and conclusion _____

Executive summary

An in vitro chromosomal aberration test using CHL/IU cells (OECD TG 473) showed positive.

Genetic toxicity in vivo

ENDPOINT_STUDY_RECORD: Genetic toxicity in vivo.001

UUID: IUC5-9f1cf02c-892b-4385-87b1-b9308a1b4173

Dossier UUID:

Author: SuperUser

Date: 2017-02-15T16:06:01.000+09:00

Remarks:

Administrative data

Endpoint

in vivo mammalian somatic cell study: cytogenicity / erythrocyte micronucleus Type of genotoxicity: chromosome aberration

Type of information

experimental study

Adequacy of study

key study

Robust study summary

false

Used for classification

false

Used for SDS

false

Reliability

1 (reliable without restriction)

Rationale for reliability incl. deficiencies

other: GLP guideline study

Data source

Reference

[Micronucleous test of 2,3,4,4'-Tetrahydroxybenzophenone on rat / MHLW Japan / study report](#)

Data access

data published

Materials and methods

Test guideline

Qualifier

according to

Guideline

other: Japan (Iyakushin No.1604): Genetic toxicity test guideline of drugs

Deviations

not specified

Qualifier

according to

Guideline

OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
in vivo mammalian somatic cell study: cytogenicity / erythrocyte micronucleus

Deviations

not specified

GLP compliance

yes

Type of assay

micronucleus assay
chromosome aberration

Test material

Test material information

[31127-54-5](#)

Test animals

Species

mouse

Strain

other: CRLj:CD1(ICR)SPF

Sex

male

Details on test animals and environmental conditions

TEST ANIMALS

- Source: Charles River Laboratories Japan, Inc. Hino Farm
- Age at study initiation: 7 weeks old
- Weight at study initiation: 29.6-34.4 g (avg. 31.9 g)
- Assigned to test groups randomly: yes
- Housing: polycarbonate cag (225 mm × 338 mm × 140 mm)
- Diet: ad libitum
- Water: ad libitum
- Acclimation period: 6 days

ENVIRONMENTAL CONDITIONS

- Temperature (°C): 22.8-24.1
- Humidity (%):52.1-61.5
- Air changes: 10-15/h
- Photoperiod: 12 h dark/ 12 h light (light time: 7:00 to 19:00)

Administration / exposure

Route of administration

oral: gavage

Vehicle

- Vehicle(s)/solvent(s) used: corn oil
- Lot/batch no. (if required): 6G2122

Details on exposure**PREPARATION OF DOSING SOLUTIONS:**

Dosing solutions were prepared on the day of administration by dissolving the test substance in corn oil.

Frequency of treatment

Twice, 24 h interval

Doses / concentrations**Remarks**

Doses / Concentrations:

0 (vehicle), 125, 250, 500, 1000, 2000 mg/kg bw/day

Basis:

actual ingested

No. of animals per sex per dose

6 animals/sex/dose

Control animals

yes, concurrent vehicle

Positive control(s)

mitomycin C

- Route of administration: single intraperitoneal injection
- Doses / concentrations: 2 mg/kg/day

Examinations

Tissues and cell types examined

Polychromatic erythrocytes from the femur bone marrow

Details of tissue and slide preparation

TREATMENT AND SAMPLING TIMES (in addition to information in specific fields): Cells for specimen were collected 24 h after the last administration.

DETAILS OF SLIDE PREPARATION: Cell suspensions were expanded on the slides, fixed with methanol, and stained with Giemsa.

METHOD OF ANALYSIS: microscopy, blind method

Evaluation criteria

Criterion for determining a positive result: A dose-related increase in the number of micronucleated cells.

Statistics

The number of micronucleated polychromatic erythrocytes was determined by the Kastenbaum and Bowman method, and Cochran Armitage test;

Ratio of polychromatic erythrocytes to whole erythrocytes by F-test, and t-test.

Results and discussion

Test results

Key result

false

Sex

male

Genotoxicity

negative

Vehicle controls valid

yes

Negative controls valid

not examined

Positive controls valid

yes

Any other information on results incl. tables

Figures and Tables (in English) are available in the following full report of the study.

http://dra4.nihs.go.jp/mhlw_data/home/pdf/PDF31127_-54_-5g.pdf

Applicant's summary and conclusion

Conclusions

Interpretation of results (migrated information): negative

The test substance did not produce micronuclei in the immature erythrocytes of the test species.

Executive summary

An in vivo micronucleus study (OECD TG 474) showed negative up to the limit dose (2,000 mg/kg bw/day for 2 days) in mice.

Toxicity to reproduction

ENDPOINT_STUDY_RECORD: Reproductive/developmental toxicity.001

UUID: IUC5-bae76ab8-3928-4002-9f8e-b2f2b22173cc

Dossier UUID:

Author: SuperUser

Date: 2017-02-15T16:07:17.000+09:00

Remarks:

Administrative data

Endpoint

screening for reproductive / developmental toxicity based on test type (migrated information)

Type of information

experimental study

Adequacy of study

key study

Robust study summary

false

Used for classification

false

Used for SDS

false

Reliability

1 (reliable without restriction)

Rationale for reliability incl. deficiencies

other: OECD Test Guideline study under GLP condition

Cross-reference

Reason / purpose

reference to same study

Remarks

7.5.1 Repeated dose toxicity: oral.001

Data source

Reference

[Combined repeat dose and reproductive/developmental toxicity screening test of 2,3,4,4'-Tetrahydroxy... / MHLW, Japan / study report](#)

Data access

data published

Materials and methods

Test guideline

Qualifier

according to

Guideline

OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)

Deviations

no

GLP compliance

yes

Limit test

no

Test material

Test material information

[31127-54-5](#)

Test animals

Species

rat

Strain

other: CrI:CD(SD)

Sex

male/female

Details on test animals and environmental conditions**TEST ANIMALS**

- Source: Charles River Laboratories Japan, Inc. Atsugi
- Age at study initiation: 10 weeks
- Weight at study initiation: Males: 335-391 g; Females: 202-249 g
- Housing: Steel wire-mesh cage (250 mm x 350 mm x 200 mm)
- Diet: ad libitum
- Water: ad libitum
- Acclimation period: 14 days

ENVIRONMENTAL CONDITIONS

- Temperature (°C): 21-23
- Humidity (%): 46-61
- Air changes: 10-15 times / hr
- Photoperiod: 12 hrs dark / 12 hrs light

Administration / exposure

Route of administration

oral: gavage

Vehicle

corn oil

Details on exposure

PREPARATION OF DOSING SOLUTIONS:

VEHICLE

- Amount of vehicle (if gavage): 5 mL/kg bw
- Lot/batch no. (if required): SDE2487

Details on mating procedure

- M/F ratio per cage: 1:1
- Length of cohabitation: up to 14 days
- Proof of pregnancy: [vaginal plug / sperm in vaginal smear] referred to as [day 0] of pregnancy

Analytical verification of doses or concentrations

yes

Details on analytical verification of doses or concentrations

Test suspensions at each concentration to be used for males in week 1 and six week of administration were analyzed by the HPLC method at Bozo Research Center Inc. Results showed that the concentration of the test article in each suspension was 95.7 to 104.5% of the nominal concentration and both values were within the acceptable range (concentration: percentage of the nominal concentration, 100 ± 10%; C.V.: 10% or below)

Duration of treatment / exposure

(P) Males: 42 days including 14 days pre-mating and mating periods, and thereafter 14 days

(P) Females: 42-55 days including 14 days pre-mating, mating and gestation periods, and the days until day 4 of lactation; satellite animals: 42 days.

Frequency of treatment

Once/day, 7 days/week

Doses / concentrations

Remarks

Doses / Concentrations:

0 (vehicle), 100, 300, and 1000 mg/kg bw/day

Basis:

actual ingested

No. of animals per sex per dose

12 animals/sex/dose (main dose group), 5 males and 5 females at 0 and 1000 mg/kg bw/day as a satellite group (without mating).

Control animals

yes, concurrent vehicle

Examinations

Parental animals: Observations and examinations

CAGE SIDE OBSERVATIONS: Yes

- Time schedule:

Males and females: once before the start of administration, 3 times/day during the administration period, and once during the recovery period

DETAILED CLINICAL OBSERVATIONS: Yes

The functional observational battery testing (FOB) was performed on all animals. Among the measures in the FOB, detailed clinical observations were made before the initiation of dosing. The

reafter, in males of the main groups, detailed clinical observations were made once a week. Also in females of the main groups, detailed clinical observations were made once a week in pre-mating and mating periods thereafter, and then those were made on days 1,7,14 and 20 of gestation, and on day 4 of lactation. For the satellite group, detailed clinical observations were made once a week in dosing and recovery periods.

Sensory motor reflexes, forelimb and hindlimb grip strengths, and motor activity were measured on week 6 of administration period (main/recovery group animals) and week 2 of recovery period (recovery group animals).

BODY WEIGHT: Yes

- Time schedule for examinations: Males (main/recovery group): Days 1, 4, 8, 11, 15, 22, 25, 29, 32, 36, 39, 42, and the day of necropsy (after ca. 16h-fasting) in dosing period

Males and females (recovery group): Days 1, 4, 8, 11, 14, and the day of necropsy (after ca. 16h-fasting) in recovery period

Females (main group): Twice a week during the precopulation period (days 1, 4, 8, 11, and 15); gestation days 0, 4, 7, 11, 14, 17, and 20; lactation days 0 and 4; and the day of necropsy (after ca. 16 h-fasting)

FOOD CONSUMPTION AND COMPOUND INTAKE (if feeding study):

- Food consumption: Yes

Males (main/recovery group): Days 1, 4, 8, 11, 15, 32, 36, and 39 in dosing period

Males and females (recovery group): Days 1, 4, 8, 11, and 14 in recovery period

Females (main group): Days 1, 4, 8, 11, and 15; gestation days 1, 4, 7, 11, 14, 17, and 20; lactation days 2 and 4

OPHTHALMOSCOPIC EXAMINATION: No

HAEMATOLOGY: Yes

- Time schedule for collection of blood: Blood was collected on the day of necropsy

- Anaesthetic used for blood collection: Yes (ether)

- Animals fasted: Yes, 16-20h

- How many animals: 5 sex/dose/group

- Parameters checked in table were examined.

CLINICAL CHEMISTRY: Yes

- Time schedule for collection of blood: Same as hematology

- Animals fasted: Same as hematology

- How many animals: Same as hematology

- Parameters checked in table were examined.

URINALYSIS: Yes (males only)

- Time schedule for collection of urine: Day 36-37 in dosing period, day 8-9 in recovery period

- Metabolism cages used for collection of urine: No data

- Animals fasted: fasting and only water at libitum (4h-urine), no fasting (20h-urine)

NEUROBEHAVIOURAL EXAMINATION: No

Estrous cyclicity (parental animals)

Vaginal smears were collected from all females in the main groups and microscopically examined every day from the day after the start of administration until the day copulation was confirmed.

During the pre-mating administration period, vaginal smear pictures were classified as proestrus, estrus, metestrus or diestrus and examined for the frequency of estrus and interval between estruses (estrous cycle). During the mating period, vaginal smears were examined for the presence of sperm.

Sperm parameters (parental animals)

Parameters examined in P male parental generations: testes weight, epididymis weight

Litter observations

PARAMETERS EXAMINED:The following parameters were examined in F1 offspring: Number and sex of pups, stillbirths, live births, postnatal mortality, presence of gross anomalies, and weight gain.

GROSS EXAMINATION OF DEAD PUPS: Yes, for external and internal abnormalities.

Postmortem examinations (parental animals)

SACRIFICE:

Male animals: Rats were euthanized by exsanguination under ether anesthesia on the day after the last administration.

Maternal animals: Rats were euthanized by exsanguination under ether anesthesia on day 4 of lactation.

GROSS PATHOLOGY, Yes: whole organs and tissues

ORGAN WEIGHTS, Yes: Brain, thyroids(including parathyroids), thymus, heart, liver, spleen, kidneys, adrenals, testes, epididymis

HISTOPATHOLOGY, Yes: Cerebrum, cerebellum, pituitary gland, spinal cord (thoracic), sciatic nerve, thyroid, parathyroid, adrenal glands, thymus, spleen, submandibular lymph nodes, mesenteric lymph nodes, heart, lung (including the bronchi), stomach, duodenum, jejunum, ileum, cecum, colon, rectum, liver, kidney, bladder, testis, epididymis, ovary, uterus, seminal vesicles, sternum and femur (including bone marrows), macroscopic lesions.

Postmortem examinations (offspring)

GROSS NECROPSY

- Gross necropsy consisted of external and internal examinations including the cervical, thoracic, and abdominal viscera.

Statistics

The data were analyzed for homogeneity of variance by the Bartlett test. If variances were homogeneous, data was analyzed by the Dunnett test, whereas heterogeneous data was analyzed by the Dunnett type mean rank test ($p < 0.05$, two-sided).

In the recovery test, these values of two groups were analyzed by F test. If variances were homogeneous, data was analyzed by the Student t-test, whereas heterogeneous data was analyzed by the Aspin-Welch t-test ($p < 0.05$, two-sided).

Reproductive indices

Each parameter was determined by the following equations:

Copulation index (%) = (No. of copulated animals/No. of co-housed animals) × 100

Fertility index (%) = (No. of pregnant females/No. of copulated females) × 100

Insemination index (%) = (No. of pregnant females/No. of copulated males) × 100

Duration of gestation (days) = day 0 of lactation – day 0 of gestation

Delivery index (%) = (No. of females delivered liveborn pups/No. of pregnant females) × 100

Implantation index (%) = (No. of implantation sites/No. of corpora lutea) × 100

Stillborn index (%) = (No. of stillborn pups/Total No. of pups born) × 100

Liveborn index (%) = (No. of liveborn pups/Total No. of pups born) × 100

External abnormalities (%) = (No. of pups with external abnormalities/No. of liveborn pups) × 100

Sex ratio = No. of liveborn male pups/(No. of liveborn male pups + No. of liveborn female pups)

Offspring viability indices

Viability index (%) = (No. of surviving pup on day 4 after birth/No. of liveborn pups on day 0 after birth) × 100

Results and discussion _____

Results: P0 (first parental animals) _____

General toxicity (P0) _____

Clinical signs

effects observed, treatment-related

Description (incidence and severity)

see 7.5.1 Repeated dose toxicity: oral.001

Body weight and weight changes

effects observed, treatment-related

Description (incidence and severity)

see 7.5.1 Repeated dose toxicity: oral.001

Food consumption and compound intake (if feeding study)

effects observed, treatment-related

Description (incidence and severity)

see 7.5.1 Repeated dose toxicity: oral.001

Organ weight findings including organ / body weight ratios

no effects observed

Description (incidence and severity)

on reproductive organs

Gross pathological findings

no effects observed

Description (incidence and severity)

on reproductive organs

Histopathological findings: non-neoplastic

no effects observed

Description (incidence and severity)

on reproductive organs

Reproductive function / performance (P0)

Reproductive function: estrous cycle

no effects observed

Reproductive function: sperm measures

not examined

Reproductive performance

no effects observed

Description (incidence and severity)

on reproductive organs

Effect levels (P0)

Dose descriptor

NOAEL

Effect level

1000

mg/kg bw/day (actual dose received)

Sex
male/female

Basis for effect level
other: no effects on reproduction

Dose descriptor
LOAEL

Effect level

100 mg/kg bw/day (actual dose received)

Sex
male/female

Basis for effect level
other: (See repeated dose toxicity)

Results: F1 generation

General toxicity (F1)

Clinical signs
no effects observed

Mortality / viability
no mortality observed

Body weight and weight changes
effects observed, treatment-related

Description (incidence and severity)
Low values of body weights of male and female pups were observed on postnatal day (PND) 4 at 300 mg/kg bw/day, and on PND 0 and PND 4 at 1000 mg/kg bw/day.

Sexual maturation
not examined

Organ weight findings including organ / body weight ratios
not examined

Gross pathological findings
no effects observed

Histopathological findings
not examined

Effect levels (F1)

Dose descriptor
NOAEL

Generation
F1

Effect level

100

mg/kg bw/day (actual dose received)

Sex

male/female

Basis for effect level

other: Low body weight of pups at 300 mg/kg bw/day

Overall reproductive toxicity

Key result

false

Reproductive effects observed

not specified

Any other information on results incl. tables

Figures and Tables (in English) are available in the following full report of the study.

http://dra4.nihs.go.jp/mhlw_data/home/pdf/PDF31127-54-5d.pdf

Applicant's summary and conclusion

Conclusions

The NOAELs for rat reproductive toxicity and developmental toxicity were determined to be 1000 mg/kg bw/day and 100 mg/kg bw/day, respectively.

Executive summary

In the combined repeated oral dose toxicity study (0, 100, 300, and 1,000 mg/kg bw/day) with the reproduction/developmental toxicity screening test (OECD TG 422), no effects were found on reproductive parameters up to 1,000 mg/kg bw/day. The body weights of male and female pups decreased on postnatal day (PND) 4 at 300 mg/kg bw/day and higher, with decreased body weights observed for both sexes on PND 0 at 1,000 mg/kg bw/day. The no observed adverse effect levels (NOAELs) for rat reproductive toxicity and developmental toxicity were determined to be 1,000 mg/kg bw/day and 100 mg/kg bw/day, respectively.

References

REFERENCE_SUBSTANCE: 2,3,4,4'-Tetrahydroxybenzophenone

UUID: IUC5-9a63fecb-2bcb-4b40-abf4-b43e1c6090c7

Dossier UUID:

Author: SuperUser

Date: 2017-10-30T11:33:45.000+09:00

Remarks:

General information

Reference substance name

2,3,4,4'-Tetrahydroxybenzophenone

Reference substance information

CAS information

CAS number

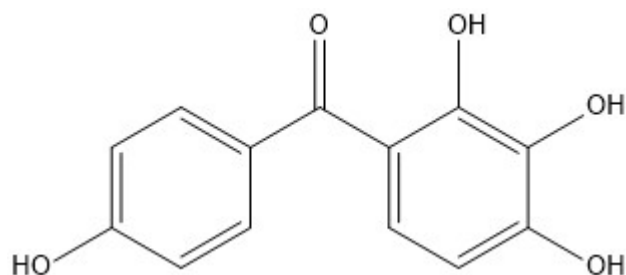
31127-54-5

Molecular and structural information

Molecular formula

31127-54-5

Structural formula



TEST_MATERIAL_INFORMATION: 3 1127-54-5

UUID: 3ea7b465-3454-38a8-ad75-f19cc02fdb16

Dossier UUID:

Author: SuperUser

Date: 2017-02-15T16:02:42.000+09:00

Remarks:

Name

31127-54-5

Composition

Type

Constituent

Reference substance

2,3,4,4'-Tetrahydroxybenzophenone / 31127-54-5

EC number

EC name

CAS number

CAS name

31127-54-5

IUPAC name

Other characteristics

Details on test material

- Name of test material (as cited in study report): 2,3,4,4'-Tetrahydroxybenzophenone
- Analytical purity: 99.86%
- Lot/batch No.: GL01
- Stability under test conditions: The stability of test material was identified by analysis of the remainder.
- Storage condition of test material: At a cold place (temperature 2~8°C) in a light resistant container

TEST_MATERIAL_INFORMATION: 3 1127-54-5

UUID: 93a10ff0-382e-3a77-a723-13aa1b58d75c

Dossier UUID:

Author: SuperUser

Date: 2017-02-15T16:04:12.000+09:00

Remarks:

Name

31127-54-5

Composition

Type

Constituent

Reference substance

2,3,4,4'-Tetrahydroxybenzophenone / 31127-54-5

EC number

EC name

CAS number

CAS name

31127-54-5

IUPAC name

Other characteristics

Details on test material

- Name of test material (as cited in study report): 2,3,4,4'-Tetrahydroxybenzophenone
- Purity: 99.91%
- Impurities (identity and concentrations): Unknown
- Lot/batch No.: JSCXB
- Stability under test conditions: Stable
- Storage condition of test material: Refrigeration
- Dosing solution storage condition: Room temperature and protected from light
- Other: The dosing solution was used within 7 days of preparation.

TEST_MATERIAL_INFORMATION: 3 1127-54-5

UUID: 4c2d18df-3eef-3b53-b47a-180f8b7bb73d

Dossier UUID:

Author: SuperUser

Date: 2016-12-21T14:50:21.000+09:00

Remarks:

Name

31127-54-5

Composition

Type

Constituent

Reference substance

2,3,4,4'-Tetrahydroxybenzophenone / 31127-54-5

EC number

EC name

CAS number

CAS name

31127-54-5

IUPAC name

Other characteristics

Details on test material

- Name of test material (as cited in study report): 2,3,4,4'-Tetrahydroxybenzophenone
- Purity: 100%
- Lot/batch No.: GL01
- Storage condition of test material: Refrigeration
- Stability under test conditions: The stability of test material was identified by analysis of the remainder.

TEST_MATERIAL_INFORMATION: 3 1127-54-5

UUID: 6beb221b-5dbc-3b58-8350-9527480efbca

Dossier UUID:

Author: SuperUser

Date: 2017-02-15T16:04:52.000+09:00

Remarks:

Name

31127-54-5

Composition

Type

Constituent

Reference substance

2,3,4,4'-Tetrahydroxybenzophenone / 31127-54-5

EC number

EC name

CAS number

CAS name

31127-54-5

IUPAC name

Other characteristics

Details on test material

- Name of test material (as cited in study report): 2,3,4,4'-Tetrahydroxybenzophenone
- Analytical purity: 99.86% (GL01), 99.91% (JSCXB)
- Supplier: Tokyo Chemical Industry Co., Ltd
- Lot/batch No.: GL01 and JSCXB
- Storage condition of test material: cool and dark place

TEST_MATERIAL_INFORMATION: 3 1127-54-5

UUID: bbbd9567-0515-3f86-b1a3-3e3d9795e741

Dossier UUID:

Author: SuperUser

Date: 2017-02-15T16:06:01.000+09:00

Remarks:

Name

31127-54-5

Composition

Type

Constituent

Reference substance

2,3,4,4'-Tetrahydroxybenzophenone / 31127-54-5

EC number

EC name

CAS number

CAS name

31127-54-5

IUPAC name

Other characteristics

Details on test material

- Name of test material (as cited in study report): 2,3,4,4'-Tetrahydroxybenzophenone
- Analytical purity:99.9%
- Lot/batch No.: EPF0296
- Stability under test conditions: stable
- Storage condition of test material: room temperature (17.6-20.8°C) in an airtight container.

TEST_MATERIAL_INFORMATION: 3 1127-54-5

UUID: 465c97b2-bdb1-31f4-9ecd-14cf6ccceeb6

Dossier UUID:

Author: SuperUser

Date: 2017-02-15T16:07:17.000+09:00

Remarks:

Name

31127-54-5

Composition

Type

Constituent

Reference substance

2,3,4,4'-Tetrahydroxybenzophenone / 31127-54-5

EC number

EC name

CAS number

CAS name

31127-54-5

IUPAC name

Other characteristics

Details on test material

- Name of test material (as cited in study report): 2,3,4,4'-Tetrahydroxybenzophenone
- Purity: 99.91%
- Impurities (identity and concentrations): Unknown
- Lot/batch No.: JSCXB
- Stability under test conditions: Stable
- Storage condition of test material: Refrigeration
- Dosing solution storage condition: Room temperature and protected from light
- Other: The dosing solution was used within 7 days of preparation.

LITERATURE: Combined repeat dose and reproductive/developmental toxicity screening test of 2,3,4,4'-Tetrahydroxybenzophenone by oral administration in rats

UUID: 693bb7a7-c435-3dfb-bd05-d9d66ea298ec

Dossier UUID:

Author: SuperUser

Date: 2017-02-15T16:04:12.000+09:00

Remarks:

General information

Reference Type

study report

Title

Combined repeat dose and reproductive/developmental toxicity screening test of 2,3,4,4'-Tetrahydroxybenzophenone by oral administration in rats

Author

MHLW Japan

Year

2009

Bibliographic source

available in the web of Japan Existing Chemical Data Base (JECDB) at http://dra4.nihs.go.jp/mhlw_data/jsp/SearchPageENG.jsp

Testing facility

BoZo Research Center

LITERATURE: Combined repeat dose and reproductive/developmental toxicity screening test of 2,3,4,4'-Tetrahydroxybenzophenone by oral administration in rats

UUID: 7c3f72b1-27ef-3a47-99bc-11e3711427e3

Dossier UUID:

Author: SuperUser

Date: 2017-02-15T16:07:17.000+09:00

Remarks:

General information

Reference Type

study report

Title

Combined repeat dose and reproductive/developmental toxicity screening test of 2,3,4,4'-Tetrahydroxybenzophenone by oral administration in rats

Author

MHLW, Japan

Year

2009

Bibliographic source

available in the web of Japan Existing Chemical Data Base (JECDB) at http://dra4.nihs.go.jp/mhlw_data/jsp/SearchPageENG.jsp

Testing facility

BoZo Research Center

LITERATURE: In Vitro Chromosomal Aberration Test of 2,3,4,4'-Tetrahydroxy benzophenone on Cultured Chinese Hamster Cells.

UUID: 4a1c80b0-857a-3d37-8c79-0685b9624cbf

Dossier UUID:

Author: SuperUser

Date: 2017-02-15T16:04:52.000+09:00

Remarks:

General information

Reference Type

study report

Title

In Vitro Chromosomal Aberration Test of 2,3,4,4'-Tetrahydroxybenzophenone on Cultured Chinese Hamster Cells.

Author

MHLW, Japan

Year

2007

Bibliographic source

Japan Existing Chemical Data Base (JECDB)

Testing facility

BoZo Research Center

LITERATURE: Micronucleous test of 2,3,4,4'-Tetrahydroxybenzophenone on rat

UUID: fec3c0ae-8118-3436-a32f-6c1913b31327

Dossier UUID:

Author: SuperUser

Date: 2017-02-15T16:06:01.000+09:00

Remarks:

General information

Reference Type

study report

Title

Micronucleous test of 2,3,4,4'-Tetrahydroxybenzophenone on rat

Author

MHLW Japan

Bibliographic source

data unpublished

Testing facility

Chemicals Evaluation and Research Institute, Japan

LEGAL_ENTITY: National Institute of Health Sciences

UUID: IUC4-b036ff75-0f3c-323b-b200-ed5f46cf5101

Dossier UUID:

Author: SuperUser

Date: 2011-06-23T11:55:01.000+09:00

Remarks:

General information

Legal entity name

National Institute of Health Sciences

Identifiers

Other IT system identifiers

IT system

LEO

ID

10767

IT system

IUCLID4

ID

16558402024DIV750

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LITERATURE: Reverse Mutation Test of 2,3,4,4'-Tetrahydroxybenzophenone on Bacteria.

UUID: dd1cb1c8-e2fe-385e-b2f4-51bdf223fc68

Dossier UUID:

Author: SuperUser

Date: 2016-12-21T14:50:21.000+09:00

Remarks:

General information

Reference Type

study report

Title

Reverse Mutation Test of 2,3,4,4'-Tetrahydroxybenzophenone on Bacteria.

Author

MHLW, Japan

Year

2006

Bibliographic source

Japan Existing Chemical Data Base (JECDB)

Testing facility

Research Institute for Animal Science in Biochemistry & Toxicology (RIAS)

LITERATURE: Single Dose Oral Toxicity Test of 2,3,4,4'-Tetrahydroxybenzophenone in Rats

UUID: fe4a0546-9397-369a-9114-737da6cca5e0

Dossier UUID:

Author: SuperUser

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Remarks:

General information

Reference Type
publication

Title
Single Dose Oral Toxicity Test of 2,3,4,4'-Tetrahydroxybenzophenone in Rats

Author
MHLW

Year
2006

Bibliographic source
available in the web of Japan Existing Chemical Data Base (JECDB) at http://dra4.nihs.go.jp/mhlw_data/jsp/SearchPageENG.jsp

Testing facility
BoZo Research Center