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**Studying toxicity actions of new pharmacological
remedy Camelyn-M 2
(Report)**

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Investigation of general toxic actions of Ointment "Camelyn M-2"

**(Acute toxicity, cumulative toxicity, allergic, topical -irritating action)
Introduction**

Investigated remedy "Camelyn M-2" presents a capsules 500 mg, with light – brown color powder, with a characteristic smell.

Composition:

Camelyn M -1	- 250 mg
Natrii hydrocarbonas	- 250 mg

According of authors "Camelyn M-2" recommendation as a immune modulating medical remedy.

Recommended treatment dose is 1 capsule 3 times in day, therapeutic daily dose make up 15 mg/kg.

Clinical studies of acute toxicity give the opportunity to establish any damaging effects of "Camelyn M-2" both in the case of a single apply and when repeated at six-hourly intervals through the day.

Objectives of study: definition of acute toxicity and LD₅₀ with different dosages of the investigated remedy, description a clinical picture of general resorption and a set of reasons for test-animals deaths.

1. Definition of acute and cumulative toxicity of Ointment "Camelyn–M-2"

1.1. Definition of acute toxicity in white mice

Method.

Under clinical observation 30 sheared white mice were divided into 5 groups, 6 in each group, with individually identified body weight.

I Group

The animals, were taking "Camelyn M-2" in dose 15 mg/20g or 50 multiple therapy dose.

II. Group.

The animals, were taking “Camelyn M-2” in dose 30 mg/20g or 100 multiple therapy dose.

III Group.

The animals were taking “Camelyn M-2” in dose 60 mg/20g or 200 multiple therapy dose IV Group.

IV I Group.

The animals, were taking “Camelyn M-2” in dose 90 mg/20g or 300 multiple therapy dose.

V Control Group.

The animals, were taking equal (equivalent) dose of Natrii hydrocarbonas.

Results

Observation of the animals has given the following picture:

After use of ointment the condition of the animals was checked twice:

- *Immediately and within two hours of use of the Ointment* -

Deviations from integrated norm not observed.

-After 24 hours

All animals willingly for food, remained healthy and active, reflexes and reactions to external irritants were normal and deaths were absent.

Daily observations of test animals over 14 days -

No deviation from the norm was noted and no deaths of test animals occurred.

Due to the absence of mice loss, an exact estimate of LD₅₀ is not possible.

Based on the results of experiments on mice, it has been concluded that LD₅₀ of the investigated remedy exceeds 4500 mg/ kg, which demonstrates that “Camelyn M-2” does not possess resorption action.

**1.2. Definition of cumulative effects of Ointment
"Camelyn M-2" in mice****Method.**

Under clinical observation 30 sheared white mice were divided into 5 groups, 6 in each group, with individually identified body weight.

I Group

The animals, were taking “Camelyn M-2” in dose 15 mg/20g or 50 multiple therapy dose.

II. Group.

The animals, were taking "Camelyn M-2" in dose 30 mg/20g or 100 multiple therapy dose.

III Group.

The animals were taking "Camelyn M-2" in dose 60 mg/20g or 200 multiple therapy dose IV Group.

IV I Group.

The animals, were taking "Camelyn M-2" in dose 90 mg/20g or 300 multiple therapy dose.

V Control Group.

The animals, were taking equivalent dose of Natrii hydrocarbonas

The investigated remedy had been used in above mentioned dosage daily for 3 days.

Results

Observation of the animals has shown the following picture:

After use of the Camelyn M2 the condition of the animals was checked twice:

- Immediately and within two hours of use of Camelyn M2 .:

Deviations from integrated norms were not observed.

- After 24 hours

All animals willingly for food, remained healthy and active, reflexes and reactions to external irritants were normal and deaths were absent.

The second use of Camelyn M2 showed:

-After 48 hours from the first using "Camelyn M-2",

all animals were alive, active, unconditioned reflexes and reactions to external irritants normal. Animals willingly for food.

The third use of "Camelyn M-2" showed:

72 hours from the first application of remedy:

No deaths were observed.

All animals remained active, reflections and reactions adequate, willingly for food.

Daily observations of the animals over 14 days.

No deviation from the norm was revealed, and no deaths were observed.

Due to absence of mice loss, an exact estimate of LD₅₀ is not possible.

Based on the results of experiments on mice, it has been concluded that the investigated remedy Ointment "Camelyn M-2" does not possess cumulative action.

1.3. Pathology- morphological research on euthanized mice, after definition of acute toxicity and cumulative effect of investigated remedy

External examination before euthanasiation:

Animals were mobile, coats pure and smooth, the skin on the back pink and without defects; lesions and haemorrhages absent, ears and tails pink without haemorrhages; reflexes adequate.

Description report (after euthanasiation) on incision

Internally organs were located correctly, mucous cover pink, velvety, damp, transparent, free from defects and haemorrhaging; well-developed fatty tissue, cardiac muscle elastic, lungs pink, light, thymus was not increased, haemorrhages not present, liver, kidneys unswollen, surface smooth, haemorrhages not present.

Gall-bladder full; no haemorrhaging of adrenal glands.

Spleen unswollen, surface smooth, light, haemorrhages not present; urinary bladder full, urine transparent.

The organs of the gastrointestinal tract were unchanged; no haemorrhages on the mucus membrane of the mouth and oesophagus; the tongue clear and without haemorrhages.

Resume

Toxicological Pathology- morphological research of the mice has shown that toxicity and cumulative effect of Ointment "Camelyn M-2" is absent.

1.4. Definition of acute toxicity of ointment "Camelyn M-2" on rats

Method

Under clinical observation 30 sheared white rats were divided into 5 groups, 6 in each group, with individually identified body weight.

I Group.

The animals were taking "Camelyn M-2" in dose 150,0 mg/200g or 50 multiple therapy dose.

II. Group.

The animals were taking "Camelyn M-2" in dose 300 mg/200g or 100 multiple therapy dose.

III Group.

The animals were taking “Camelyn M-2” in dose 600 mg/200g or 200 multiple therapy dose.

IV I Group.

The animals were taking “Camelyn M-2” in dose 900 mg/200g or 300 multiple therapy dose.

V Control Group.

The animals were taking equivalent dose of Natrii Hydrocarbonas.

Animals took a medicine with food.

Results

Observation of the animals has shown the following picture:

- Immediately and within two hours of applying the “Camelyn M-2”:

No deviations from integrated norm were observed.

-After 24 hours

All animals willingly for food, remained healthy and active, reflexes and reactions to external irritants were normal and deaths were absent.

Daily observations of the animals over 14 days.

No deviations from the norm were recorded and no dead animals observed.

Due to absence of test-animal loss, exact estimate of LD₅₀ is not possible.

Based on the results of experiments on rats, it has been concluded that LD₅₀ of the investigated remedy exceeds 4500 mg/ kg., thus demonstrating that “Camelyn M-2” does not possess resorption action.

1.5. Definition of cumulative effect of remedy

Camelyn –M2 on rats

Method

Under clinical observation 30 sheared white rats were divided into 5 groups, 6 in each group, with individually identified body weight.

I Group.

The animals, were taking “Camelyn M-2” in dose 150,0 mg/200g or 50 multiple therapy dose.

II. Group.

The animals, were taking “Camelyn M-2” in dose 300 mg/200g or 100 multiple therapy dose.

III Group.

The animals were taking "Camelyn M-2" in dose 600 mg/200g or 200 multiple therapy dose.

IV I Group.

The animals, were taking "Camelyn M-2" in dose 900 mg/200g or 300 multiple therapy dose.

V Control Group.

The animals were taking equivalent dose of Natrii hydrocarbonas, animals took a medicine with food in above mentioned dosage for three days.

Results

Observation of the animals has shown the following picture:

After administration of the "Camelyn M-2" the condition of the test-animals was checked twice:

- Immediately and within two hours of applying the Camelyn M2:

No deviations from integrated norms were observed.

-After 24 hours

All animals were healthy, active, unconditioned reflexes and reactions to external irritants were normal, animals willingly for food. No dead animals were observed.

The second use of "Camelyn M-2" showed:

-After 48 hours from the first using "Camelyn M-2"

all animals were alive, active, unconditioned reflexes and reactions to external irritants normal. Animals willingly for food.

The third use of "Camelyn M-2" showed:

72 hours from the first application of remedy:

No deaths were observed.

All animals remained active, reflections and reactions adequate, willingly for food.

Daily observations of the animals over 14 days.

No deviation from the norm was revealed, and no deaths were observed.

Due to absence of rats loss, an exact estimate of LD₅₀ is not possible.

Based on the results of experiments on rats, it has been concluded that the investigated remedy Ointment "Camelyn M2" does not possess cumulative action.

6. Pathology - morphological research of the euthanized rats, after definition of acute toxicity and cumulative effect for Ointment "Camelyn M-2" (investigated remedy)

External examination before Euthanisation

Animals were mobile, coats pure and smooth, skin on back pink, without defects, haemorrhages not present; Ears, tail pink, without haemorrhages. Reflexes normal, adequate.

Description report (after euthanasia) on incision.

Internal organs located correctly, mucus cover pink, velvety, damp, transparent, free from defects and haemorrhage, well-developed fatty tissue, cardiac muscle elastic, lungs pink, light; Thymus unswollen, haemorrhages not present; liver, kidneys unswollen, surface smooth, haemorrhages not present.

Gall-bladder full, no haemorrhages present in adrenal glands; spleen unswollen, surface smooth, light, haemorrhages not present, urinary bladder full, urine transparent.

Gastrointestinal tract organs unchanged; no haemorrhages present on mucus membrane of mouth and oesophagus, tongue clear and without haemorrhaging.

Resume

Toxicological and Pathology – morphological research on rats has shown that Camelyn M2 does not possess acute toxicity or cumulative effects.

2. Definition of Allergic and Topical -irritating action of “Camelyn M-2 «on rats.

Method.

For the clinical study of allergic and Topical -irritating effects on rats was used a skin application.

In experiments were used 20 guinea-pigs with 400 -500 g. body weight 10 - for experience, and 10- for control.

The investigated animals were sheared (size 2, 0 x 2, 0 sm) on a lateral surface, close to the centre of the body, and the cleaned surface of the skin treated with (investigated remedy) 0,5g “Camelyn M-2” water solution.

The skin application was carried out daily during one month.

Results were examined under magnification after 30 applications. Size of skin's fold was measured by shtangencircul in both treated and control animals.

Results

After treatment with solution. the skin remained smooth, pure, haemorrhages, rashes, lesions and hypostases were not present. was visible insignificant xerodermia and thickening of skin fold.

The average size of a skin fold in treated animals was 1, 18 mm.

In control animals - 1, 16 mm.

Treated skin surface color and temperature did not differ from surrounding tissue, nor from tissue of animals from control group.

The guinea-pig were euthanized by decapitation.

Description report on incision

Internal organs located correctly, tissue pink, fatty tissue well developed, pleura, peritoneum smooth, haemorrhages not present, organs not increased in size, moist, light.

The mucous membrane of mouth, oesophagus, tongue, gastrointestinal tract's organs without macroscopic changes.

Resume

On the basis of experimental data it is possible to reach the following conclusion:
The investigated remedy "Camelyn M-2" - does not cause allergic reactions.
Possessed with insignificant topical -irritating action.

Conclusion

Experimental studies with peroral administration on mice and rats have shown following:

"Camelyn M-2" does not possess general toxicity effects.

The maximum permissible dose for rats and mice has not developed acute and cumulative toxicity.

LD₅₀ "Camelyn-M2" - for mice and rats exceeds 4500mg/kg body weight or exceeds 300 time of therapy dose.

Experimental studies on guinea-pig, mice and rats have shown that "Camelyn M2" possesses no topical-irritating effects.