LD50 ANALYSIS REPORT

Company Name: MFY Ortaklar Grup Tıbbi İlaç ve İlaç Hammadde Üretimi İnş. Gıda Canlı Hay. İth.İhr. San. Tic. Paz. Ltd. Şti.

Company Address Kadirli Organize Sanayi Böl. 2 Sk No:6 Kadirli/Osmaniye

Tax No: 6200590934

Scorpion Name: *Androctonus turkiyensis*

Familiy: Buthidae

Species: *Androctonus turkiyensis*

Genus: Androctonus

Sample Delivery Date: 22.08.2023

Sample Information: Dust form, 1 mL White color liquid Scorpion Venom.

Sample Purity: 100%

Analyses Date: 28-31. 08.2023

Analyses: LD50 Analyses

Pre-Injection and Injection Notes

Venoms from 12.5 mg of the lyophilized ***Androctonus turkiyensis*** scorpion were stored at -20°C until the start of the study. Stock reconstitution was performed with toxic sterile physiological saline at a dose of 1.6 mg/100µL in 2 mL volume on the study day. 1 mL is reserved for use in the 1.6 mg/animal group. The other portion was used for serial dilution and prepared with an equal volume of sterile physiological saline. 1.6 - 0.8 - 0.4 - 0.2 - 0.1 - 0.05 - 0.025 mg/animal groups inoculum was prepared. Non-toxic physiological saline was used as the normal control. For each group, the inoculation route was determined as intraperitoneal and the inoculation volume was 0.1 mL and applied. The number of animals in each group was 10 (5 females and 5 males) animal breeds were Swiss albino. The injection time for each group did not exceed 3 minutes. No faulty injection, faulty equipment, or abnormal animal was detected.

Reaction Notes

No reaction was observed in the normal control group. Mild depression symptoms, apathy towards the environment, and short-term allergic symptoms were observed in the low-dose groups. Especially at doses of 0.05 mg and above, accelerated respiration, hyperactivity, aggression, pruritus symptoms and an increase in climbing behavior were detected in the following 7-12 weeks. Findings such as coming together within minutes, slowing down the movements, losing interest in the environment were observed. An increasing number of deaths were seen associated with dose escalation from the 0.1 mg dose. Most deaths occurred within the first hour after injection. Ataxia, torticollis, shock-like neurological symptoms were observed at doses of 0.8 mg and above.

Necropsy Notes

All animals were detected antisternally from 4 legs. The abdomen and thorax were opened with a medial incision. Lungs, heart, diaphragm, liver, intestines, stomach, spleen, kidneys, aorta, vena cava, and subcutaneous connective tissue were examined for necrosis, hyperemia, petechial hemorrhages, thromboembolism, blood coagulation, and other pathological findings. In general, natural findings were observed at low doses. Subcutis hyperemia, kidney ischemic damage, and gastric and intestinal hyperemia were observed in low doses in groups with death. Hyperemic lungs, infarct areas in the gastric fundus, hyperemic pleura, clotted blood in the heart ventricles, clotted blood in the aorta and vena cava, in rare cases cardiac tamponade, subdural hematomas were observed at increasing doses in correlation. In general, it was determined that the causes of death were bleeding/intravascular coagulations due to coagulation disorders.

Calculation of LD50 Value

Results were evaluated using the Spearman & Kaerber Method.

$$LD_{50} = X_0 - \frac{d}{2} + d\frac{r}{n}$$

X_O: Number of surviving mice in the group

d: $\log_{10}$(dilution factor)

r: Number of Mice died

n: replicated or animal numbers

Analysis Results

Identification of Hazards

Not dangerous substance or mixed according to regulation EC) No 1272/2008.

First Aid Precaution

- **In case of inhalation**

  If inhaled, remove casualty to fresh air. If breathing has stopped, give artificial respiration.

- **In case of skin contact**

  Wash with soap and plenty of water.

- **In case of eyes**

  As a precaution, flush eyes with water.

- **In case of swallowed**

  Never give anything by mouth to an unconscious person. Rinse mouth with water.

Personal Protective Equipment

- **Eye/face protection**

  Use eye protection equipment tested and approved in accordance with standards such as NIOSH (US) or EN 166 (EU).

- **Skin protection**

  Wear gloves when handling. Gloves should be checked before use. Use the correct glove removal method (without touching the outer surface of the glove) to avoid skin contact with this product. Contaminated gloves should be disposed of in accordance with good laboratory practice and compliance. Wash and dry your hands. The selected protection gloves must comply with the EU 2016/425 Regulation and the EN 374 standard prepared based on this regulation.

- **Body production**

  Choose appropriate body protection according to the type, concentration and amount of the hazardous substance as well as the workplace conditions. The type of protective equipment should be determined according to the amount and concentration of the dangerous substance according to each workplace.

- **The respiratory system production**

  Respiratory protection is not required. Use (EN143) type dust masks to avoid irritating dust levels. Use relevant devices and supplies such as NIOSH (United States) or CEN (European Union).

- **Environmental exposure control**

  Be careful not to mix into the sewer.

Toxicological Information

Acute Toxicity

LD50 Intraperitoneal – Mouse - **0.51 mg/kg**

Notes: Accelerated Respiration, Hyperactivity, Aggression, Itching Symptoms, Increased Climbing Behavior

LD50 Intramuscular - Mouse - **6.87 mg/kg**

Notes: Behavior: Rhythmic muscle contractions, Cyanosis, Sweating

Respiratory or skin sensitization

Prolonged or repeated exposure may cause allergic reactions in some individuals with sensitivities.

Germ cell mutagenicity

No data available

Carcinogenicity

IARC: None of the ingredients of this product, which is 0.1% or greater, have been identified by the IARC as a probable, probable, or approved carcinogen.

SEKAGEN BİYOTEKNOLOJİ SAN. TİC. LTD. ŞTİ.
SEKAGEN BİYOTEKNOLOJİ SAN. TİC. LTD. ŞTİ.
Konya Teknokent Akademi Bl. Gürbulut Sk No.67
MERAM V.D: 459 005 9886 Selçuklu / KONYA
Mersis : 0759 005 9866 0001 - Tic. Sic. 61984