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Research Article

# CISTANCHE MONGOLIA GENERAL PHARMACOLOGICAL AND ANTI-DEPRESSION PROPERTIES OF THE EXTRACT

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## ABSTRACT

Although time rapidly develops, it has not failed to show its influence on humanity. The abundance of information, noise, the development of the Internet, etc. affect the human psyche. Today, the demand for antidepressants is growing. Of course, the low side effects of the drug, long dosage interval, and naturalness lead to many advantages. The purpose of this research is to study the toxicity and general pharmacological properties of an extract prepared from the plant Cistanche Mongolica, growing wild in the Republic of Uzbekistan, as well as to determine the antidepressant properties of this extract.

## KEYWORDS

Plant extract Cistanche Mongolian, pharmacology, general pharmacological properties, acute toxicity of the substance after oral administration, antidepressant properties.

## INTRODUCTION

This scientific article presents the toxic-pharmacological properties of Cistanche plants, which belong to the paniculate family. Nowadays, it is very important to find effective medicinal substances from local plants. [1;3;5] Cistanche is widely used in traditional Chinese medicine. Abroad Cistanche tubularis is widely used in the treatment of osteoporosis (OP), Alzheimer's disease (AD), and male sexual dysfunction (MSD). Cistanches Herba is used to treat kidney failure, female infertility, abnormal discharge, and constipation in old age. [2;4] Considering the above, we analyzed some pharmacological properties and acute toxicity of Cistanche Mongolia, growing in the Fergana region of

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the Republic of Uzbekistan. Information about this study is provided below.

Purpose of the research: Determination of acute toxicity and general pharmacological properties of the extract isolated from the above-ground and underground parts of the plant.

## MATERIALS AND METHODS OF THE RESEARCH

Academician S.Yu carried out the experiments at the Institute of Chemistry of Plant Substances of the Academy of Sciences of the Republic of Uzbekistan named after Yunusov. The object of the research is a cistanche collected from the Fergana State Natural Monument, located in the Ezevon district of the Fergana region. Mongolia is an extract isolated from the aboveground and underground parts of the ghee plant. The plant stem was extracted with 80% ethanol. Animals were randomly selected and kept in cages for at least 5 days before admission to ensure acclimation to laboratory conditions. The experiments were conducted on 60 white female mice weighing 18-22 g. During the experiment, the acute toxicity of the substance was determined. Experiments to study general pharmacological properties were conducted on rabbits weighing 1.5-2 kg, and white laboratory rats weighing 200-220 g. All animal treatments were carried out according to the requirements of international recommendations of the European Convention for the Protection of Vertebrate Animals used for experiments or other scientific purposes [6]. To study the local effect of the drug, an experiment was conducted on rabbits by applying it to a previously cut (4x5 cm) area of the back skin Cistanche extract Mongolian used as a solution, 4 drops every day for 20 days. The control group of animals was treated with saline under the same conditions.

In order to study the effect of the drug on the mucous membrane of the eye, it was assessed by instilling the test substance into the conjunctival sac of a rabbit's eye.

In order to study the cumulative nature of the drug, an experiment was conducted on white rats. Cistanche Mongolian extract 50-100 mg/kg and 200 mg/kg were tested daily for 20 days. The control group of animals was injected with saline solution under similar conditions. During the experiment, the general condition, weight, behavior, condition of the scalp, mucous membranes, and food and water consumption were monitored.

The permitted dose of the drug was administered intraperitoneally on the 21st day from the start of the experiment. Control animals were injected with saline solution on day 21 according to a similar schedule.

Quantitative data obtained from the study is a t-test Student's test using variation statistics using STATISTICA version 6 StatSoft, Inc. (2001) and analyzed using a numerically accelerated method based on a static table to evaluate pharmacological effectiveness.

## RESULTS AND ITS DISCUSSION

Cistanche acute toxicity of the extract obtained from the above-ground and underground parts of the Mongolica plant was carried out on white mice. During the experiments, the test substance was administered orally in doses ranging from 1000 mg/kg to 10,000 mg/kg and observed for the first 3-4 hours and 7-14 days. In small doses, practically no side effects were observed. At doses above 8000 mg/kg, rapid breathing, increased heart rate, and decreased mobility were initially observed. With an increase in dose, no lethal outcome was observed in the first 3-4

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hours. The results obtained from the experiments are presented in Table 1 below.

**Table 1**

**Results of acute toxicity of Cistanche Mongolica plant extract in white mice**

| No. | Substance name | Dose mg/kg | Number of animals | Death toll | Number of survivors | % survivors |
|---|---|---|---|---|---|---|
| 1. | *Cistanche Mongolian* | 1000 | 10 | 0 | 10 | 100 |
| 2. | *Cistanche Mongolian* | 3000 | 10 | 0 | 10 | 100 |
| 3. | *Cistanche Mongolian* | 5000 | 10 | 0 | 10 | 100 |
| 4. | *Cistanche Mongolian* | 7000 | 10 | 0 | 10 | 100 |
| 5. | *Cistanche Mongolian* | 8000 | 10 | 0 | 10 | 100 |
| 6. | *Cistanche Mongolian* | 10,000 | 10 | 0 | 10 | 100 |

As a result of the experiments, it is clear that the acute toxicity of the Cistanche Mongolica plant extract was LD 50, which was more than 10,000 mg/kg when administered orally. In terms of acute toxicity, the substance belongs to class V and is considered harmless.

Experiments conducted to study the effect properties showed that the drug did not have any effect on the skin when applied repeatedly to the skin (20 times). When introduced into the conjunctival sac of the eye, there was no hyperemia of the mucous membrane and lacrimation.

The results of the cumulative effect study showed that the drug did not cause significant changes in general conditions and behavior during the experiment. All animals were eating well and gaining weight. No animal deaths were recorded.

Thus, Cistanche extract Mongolica does not cause the accumulation of substances in the body of animals.

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Cistanche Mongolian extract does not have an irritating effect on the skin and mucous membranes of the eyes of experimental animals with single or repeated use.

Cistanche Mongolica extract with repeated use to the cumulative function doesn't have

With long-term use, it does not accumulate in the animal's body and does not have a toxic effect.

## CONCLUSION

Thus, the acute toxicity of the Cistanche Mongolica plant extract has been established. was more than 10,000 mg/kg when taken orally. In terms of acute toxicity, the substance is practically harmless and belongs to class V. 50 at doses studied; 100 and 200 mg/kg do not irritate the skin. When introduced into the conjunctival sac of the eye, there was no hyperemia of the mucous membrane and lacrimation. It is not cumulative.

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