

# KHARKIV NATIONAL MEDICAL UNIVERSITY

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The number of convulsions, probably in the control pathology group, decreased by 40.2%, the number of involuntary contractions of the abdominal muscles was  $28.7 \pm 3.59$  in animals under the influence of MUSHROOM veselka. The number of convulsions decreased by 50.4%, the number of convulsions was  $23.8 \pm 5.42$  in animals, with the introduction of diclofenac sodium,.

Conclusion. Therefore, the analgesic effect of the tincture of MUSHROOM veselka was established on the model of cramps after administration of Acetic Acid. The comparative analysis of analgesic activity makes it possible to state that the tincture of the fungus in the conditions of the experiment is almost inferior to diclofenac sodium, and has a clear positive effect.

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## **STUDY OF THE SILICON-CONTAINING SORBENTS ACTIVITY AT DIFFERENT PH**

Enterosorption methods are a very effective and popular for the management of toxins in clinical practice. The medical application of sorbents has been known since ancient times, but as an independent therapeutic method enterosorption was formed in the 1950s. The diversity of used enterosorbents varies according to their chemical composition and different dosage forms.

In our previous studies, we studied the sorption capacity of the following sorbents: SORBEX® - active ingredient is activated carbon, enterosgel - hydrogel methyl silicic acid, and white coal - silicon dioxide. It was found that Enterosorbent of the fourth generation (White Coal) has the highest adsorption capacity.

As the objects of our present work we selected silica-based sorbents in the same dosage form:

1. Polysorbent Neo (silicon dioxide, microcrystalline cellulose),
2. Smecta (Diosmectite).

Vitamin B12 was used as a marker of adsorption simulating toxins with average molecular weight.

Studies of sorption activity were performed by spectrophotometry method. The optical density of the vitamin B12 stock solution was compared with the vitamin B12 solution after interaction with the corresponding sorbent. The experiment was performed using a paddle apparatus which is used for the study of drugs bioequivalence.

This approach allows to simulate physiological processes taking place in gastrointestinal tract. The dissolution mediums are solutions with pH = 2 and pH=6.8; volume of dissolution medium - 250 ml, rotation rate of the basket - 100 rpm, dissolution time - 60 minutes, temperature 37 °C. For testing, a daily dose of sorbent was placed in the instrument cup and an aliquot of B12 was added. Solutions of the studied sorbents without vitamin B12 (comparison solution) were prepared in parallel. Sample aliquots (10 ml) were taken after 60 min from the center of the dissolution vessel, filtered through a blue ribbon paper filter, discarding the first 2 ml of the filtrate. The optical density values were measured three times in the range of 250 to 500 nm relative to the comparison solution ( $A_n$ ).

The absorption coefficients of the studied sorbents were determined by the absorption ratio:

$$K = A_0 / A_n,$$

where  $A_0$  – the optical density of the vitamin B12 stock solution,

$A_n$  – the optical density of the vitamin B12 solution after interaction with the sorbent.

Thus, it was found that the highest adsorption capacity has enterosorbent Smecta (17.18), while Polysorbent Neo demonstrated low adsorption capacity (1.12) in the medium simulating the stomach pH 2. Both investigated sorbents demonstrated similar results in the medium with pH 6.8 simulating intestinal juice 1.08 and 1.03 correspondingly.

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