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Institute for Problems of Cryobiology and
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UNESCO Chair in Cryobiology

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Abstract book

**46th Annual international Conference of
Young Scientists**

**"COLD IN BIOLOGY AND MEDICINE:
CURRENT PROBLEMS IN CRYOBIOLOGY,
TRANSPLANTOLOGY, AND
BIOTECHNOLOGY"**

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The abstract book contains materials of scientific works on topical studies of the effects of low temperatures on various biological objects, the problems of modern cryobiology and cryomedicine.

Materials are given in the author's edition.

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Poster presentations (posters will be available on the [conference website](#))

1	Z. Michalová, E. Szekiová, Z. Dzurjašková, I. Vanický	Paclitaxel induced peripheral neuropathy in vitro <i>Institute of Neurobiology, Biomedical Research Center, Slovak Academy of Sciences, Šoltésovej 4-6, 040 01 Košice, Slovakia</i>
2	A. Kaverinska, A. Tkachenko, V. Prokopiuk	Search for methodological approaches of organotypic cultivation for following cryopreservation <i>IPC&C NAS of Ukraine, Kharkiv, Ukraine</i> <i>Kharkiv National Medical University, Ukraine, Kharkiv</i>
3	T. Mykhalchuk, M. Shevchenko, V. Prokopyuk, O. Prokopyuk	Study of cryopreserved placental cells biological effect on organotypic uterine culture <i>IPC&C NAS of Ukraine, Kharkiv, Ukraine</i>
4	Y. Chyzh, L. Marchenko, T. Govorukha, N. Repin	Effect of placental tissue freeze-thawing modes on composition and biological activity of its cryoextracts <i>IPC&C NAS of Ukraine, Kharkiv, Ukraine</i>
5	H. Shkarlat, Ya. Cherkashyna, L. Stepanyuk, S. Sevastianov	Antagonistic activity of immobilized symbiotics after lyophilization and storage at different temperatures <i>IPC&C NAS of Ukraine, Kharkiv, Ukraine</i>
6	A. Popovičová, K. Fabianová, M. Martončíková, A. Raček, E. Račeková	Neurons of the olfactory neurogenic region of the rat: a morphological study <i>Institute of Neurobiology, Biomedical Research Center, Slovak Academy of Sciences, Šoltésovej 4-6, 040 01 Košice, Slovak Republic</i>
7	K. Fabianová, J. Babel'ová, A. Popovičová, D. Fabian, <i>et al.</i>	Maternal nutrition and neurogenesis <i>Institute of Neurobiology, Biomedical Research Center, Slovak Academy of Sciences; Institute of Animal Physiology, Centre of Biosciences, Slovak Academy of Sciences, Košice, Slovak Republic</i>
8	T. Miroshnichenko, N. Bashtan, H. Mozgovska, T. Ivchenko, <i>et al.</i>	Yield of table beets (<i>Beta vulgaris var, conditiva</i>) after pre-sowing treatment of seeds by ozonation and freezing <i>Institute of Vegetable and Melon of the National Academy of Agrarian Sciences of Ukraine;</i> <i>IPC&C NAS of Ukraine, Kharkiv, Ukraine</i>
9	M. O. Chyzh, I. V. Koshurba	Comparative evaluation of antiulcerogenic action of cryoconserved placenta extract under different modes of introduction <i>IPC&C NAS of Ukraine, Kharkiv, Ukraine</i> <i>Communal non-profit enterprise "Chernivtsi Regional Perinatal Center", Chernivtsi, Ukraine</i>
10	O. Osetsky, S. Sevastianov, V. Potapov, D. Bilyi, I. Piliugina	Technology of cryosublimation fractionation in the production of biologically active liquor-table waters <i>State Biotechnological University,</i> <i>IPC&C NAS of Ukraine, Kharkiv, Ukraine</i>

Comparative evaluation of antiulcerogenic action of cryoconserved placenta extract under different modes of introduction

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Introduction. In the studies of Hladkykh F.V. and sang. (2021) found that cryopreserved placental extract (CEP) has antiulcer activity in ulcerative lesions of the digestive tract by nonsteroidal anti-inflammatory drugs. This is a prerequisite for further in-depth study of the gastroprotective activity of CEP under conditions of ulcerogenesis of other etiologies to assess the feasibility of using this cryoextract in classical peptic ulcer disease.

Aim. To carry out a comparative assessment of the antiulcerogenic effect of CEP in the prophylactic and therapeutic regimens of administration on the model of alcohol-prednisolone gastric lesions in rats.

Materials and methods. The study was conducted on 28 male rats weighing 200–220 grams. After 24 hours of fasting, rats were administered intragastrically with prednisolone (20 mg/kg) dissolved in 80.0% ethyl alcohol (0.6 ml/100 grams of animal body weight). The use of alcohol-prednisolone mixture (APM) is justified by the synergism of ulcerogenic action of components – the corticosteroid prednisolone inhibits the biosynthesis of prostaglandins, which leads to a weakening of the resistance of the gastric mucosa (GM). CEP was administered intramuscularly at a dose of 0.16 ml/kg body weight in the prophylactic regimen (1 time per day for 5 days before APM administration) and in the treatment regimen (1 hour after APM administration). Twenty-four hours after APM administration, rats were removed from the experiment and a macroscopic scoring of the GM status was performed and an ulcer index (UI) was calculated.

Results. It was found that the prophylactic mode of administration of CEP showed a pronounced antiulcerogenic effect in the model of alcohol-prednisolone gastric ulcer in rats, which indicated a statistically significant ($p < 0.05$) decrease in UI in rats injected CEP compared with control animals in 7, 4 times. In addition, it should be noted that the gastroprotective effect of CEP exceeded the similar activity of the proton pump inhibitor esomeprazole (reference drug) 4 times, which can be attributed to the peculiarities of the chosen mode of administration. At the same time, the treatment regimen of CEP was significantly inferior to the effectiveness of esomeprazole. Thus, UI on the background of the selected cryoextract was 9.3 times higher than in rats administered esomeprazole.

Conclusions. CEP has a pronounced anti-ulcerogenic effect in the prophylactic regimen, but is significantly inferior to the reference drug esomeprazole in the treatment regimen. It is advisable to conduct a study of the antiulcer effect of CEP in the combined (therapeutic and prophylactic) mode of administration.

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