STUDY OF THE ACTIVITY OF EXTRACTS FROM THE ASKOLIT PLANT-DERIVED FOOD SUPPLEMENT AGAINST INTESTINAL INFLAMMATION AND COLITIS

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Annotation

The article discusses about how effect ASKOLIT for ulcerative colitis and the distribution areas of the plants, as well as the unsurpassed role of leaves in promoting human health, the chemical composition and biological significance of vitamins ASKOLIT, as well as several recommendations for the treatment of ulcerative colitis modern medicine. traditional medicine based on the compound leaves plants Calendula officinalis and inula helenium, as well as data on the mechanism of action on the colon wall and their discussion.

Introduction

Ulcerative colitis (UC) is an inflammatory disease limited to the colonic mucosa [1, 2] that is characterized by a variety of symptoms, including abdominal

pain and cramping, bloody diarrhea, rectal bleeding, weight loss, fever, and fatigue, which may begin gradually or start all at once [3, 4]. Currently, the pathogenesis of UC remains unknown, but it has been related to multifactorial mechanisms involving interactions between genetic and immunological and environmental factors [5]. Nevertheless, there is no evidence that any of these factors are the direct cause of UC, which means that the etiology of the UC remains unclear [6].

This disease is considered a problem in modern society due to its high incidence, which has increased since the last decade [1, 7]. In fact, the incidence and prevalence of inflammatory bowel diseases, where UC is the principal disease together with Crohn's disease, is increasing in Northern Europe, the United Kingdom, and the United States [8], and even in regions where its incidence has been considered low, including Latin America [7].

Study of the anti-inflammatory and anti-colitis activity of extracts from ASKOLIT plant-derived food supplement in rats

The purpose of the work: to study the activity of ASKOLIT extract against intestinal inflammation and colitis induced in rats.

Sample: Food supplements obtained from ASKOLIT plants were submitted for testing to the laboratory of the Institute of Biophysics and Biochemistry under the National University of Uzbekistan named after Mirzo Ulugbek.

Sample: 1. The extract of food supplements obtained from ASKOLIT plants was presented for the experiment in the form of a dry extract with a yellowish-green color, a specific odor.

Materials and Methods:

Pharmacopoeial preparations “Salofalk” were selected for comparison. “Salofalk” is available in the form of 500 mg rectal suppositories, manufactured

by: Dr. Falk Farm, Germany. Research method. The study of the anti-inflammatory and anti-colitis activity of ASKOLIT plant food supplements was conducted on 36 male white rats with a body weight of 180±20 g, who had passed the quarantine period for 10-14 days. In this study, the biological activity of ASKOLIT food supplement against colitis in 36 rats was experimentally tested.

Today, inflammatory bowel disease is observed in the population, regardless of age, due to an unhealthy lifestyle and malnutrition, and in chronic cases, at various stages of the disease, from 6.1% to 69.7%. Failure to diagnose the disease in a timely manner and not adhering to the necessary diet can lead to negative consequences and even surgical intervention. Along with the advantages of synthetic agents used at different stages of intestinal inflammation, there are also unpleasant consequences, such as damage to natural immunity by suppressing the vital activity of microorganisms in the intestine.

Inflammatory bowel disease (IBD) is a chronic, recurrent pathology that affects various parts of the gastrointestinal tract and affects the mucous membrane. As the disease progresses, typical dyspeptic disorders, as well as extraintestinal manifestations (for example, weakness and itching), are observed. Types of inflammatory bowel disease:

Ulcerative colitis - affects the colon, which causes periods of remission (abdominal pain, diarrhea, and in severe cases, internal bleeding are observed); Crohn's disease is a type of chronic inflammation that affects almost all parts of the gastrointestinal tract (significant damage to intestinal tissue, fatigue, weight loss, diarrhea, and abdominal pain are observed); It is an inflammation of the colon caused by ischemia or radiation, and develops against the background of chronic inflammatory processes, for example, ulcerative colitis. Almost all inflammatory bowel diseases are caused by a violation of the microbiota of the small and large intestines. Crohn's disease develops due to a genetic predisposition.

IBD is a global disease, and the incidence rate has stabilized in Western countries, North America, Europe and Asia, but the prevalence of IBD is increasing. According to statistics, the incidence of IBD in the United States and Western European countries is higher than in other countries of the world, with 70 thousand new cases and more than 3 million patients in total recorded annually. The disease is observed in people aged 20-40 and over 60 years. Prevention and treatment of inflammatory bowel diseases, which are a very urgent problem worldwide, is also important in our country, as it is proven that they can lead to very serious complications and ultimately cause colon cancer.

"ASKOLIT" – inula helenium and Calendula officinalis

The aim of the study is to test the biological activity of the "ASKOLIT" food supplement (phytotea) rich in biologically active substances, obtained from cinnabar and andiz, in inflammatory bowel diseases (chronic colitis) by testing it in vivo.

Materials and methods: Before the experiments, enzymes were analyzed based on IFA (Immunoenzyme analysis). Then, after the drug "ASKOLIT" was given, IFA analysis was performed again.

2 weeks before the start of the experiment, the animals were brought in for adaptation to the environment. During the research, experiments on animals were carried out in compliance with the rules of bioethics. All animals were kept in special plastic cages at a controlled temperature (t=24±1°C), and the relative humidity of the air was controlled to be 70%. Then, the animals were decapitated, bled, and the internal organs were opened. Immunoenzyme assay (IFA): Blood samples were stored in a thermoshaker at 37o C for 90 minutes in 100 µl. Then, they were removed, biotin solution was added, and the samples were kept in a thermoshaker for 60 minutes at 37o C. Then, they were washed 3 times. HRP conjugate was added and washed 5 times. Then, the real phase was formed when

the stop reagent was added. After separating the serum samples, they were stored in a refrigerator at -20°C until IFA analysis. Serum lipase, catalase, MDA

1-table

Substance	Control	Experience	notes
H_2O_2	2 ml	2 ml	-
Blood serum or homogenate	-	0,1 ml	10 min37^{0}C
H_2O	0,1	-	
$(NH_4)_6Mo_7O_{24}$	1 ml	1 ml	-

Catalase activity in serum and tissues was expressed as catalase number and calculated according to the following formul.

(μκατ/λ)E=(Anazorate – Atagriculture)*V*t*22.2

Determination of protein content.

Protein content was determined using the Biuret method. The Biuret method is one of the colorimetric methods for the quantitative determination of proteins in solution. Developed in 1949 by Gornall, Bardaville and David. It is based on the formation of a biuret complex (purple in color) of peptide bonds of proteins with divalent copper ions. The method uses the so-called. Biuret reagent, which consists of KOH, CuSO4 and sodium citrate (or sodium tartrate). In the resulting complex, copper is bound to 4 nitrogens through coordination bonds and to 2 oxygens through electrostatic bonds. A complete complex is formed only with peptides consisting of more than 4 residues. The optical density of the solution (directly proportional to the peptide concentration) is determined at 540-560 nm. The

advantages of the method include its low sensitivity to foreign substances, low error. The sensitivity of the method is 2-10 mg/ml.

Determination of lipase enzyme activity

Lipase was determined using the GOD-POD kit (Cypress Diagnostics, Belgium). The essence of the test is that the enzyme activity is measured photometrically at a wavelength of 580 nm, the color intensity of which depends on the concentration of the lipase enzyme in the sample being tested. 1- 2 - O - diauryl - rac - glycerol - 3 - glutaric acid - (6 – methylresorufin) ester Lipase→ 1-2-O-diauryl-rac-glycerol + Glutar-6-methylresorufin ester (unstable) OH-→ Glutaric acid + Methylresorufin Lipase (U/l) = * 53 U/l (standard conc.)

Determination of cholinesterase enzyme activity

Kinetic photometric test Under the action of cholinesterase, butyrylthiocholine is hydrolyzed to form butyric acid and combines with thiocholine. Then thiocholine decolorizes potassium hexacyano (III)-ferrate (red blood salt). hexacyano-(II)-ferrate (yellow blood salt), which leads to a decrease in light absorption measured at 405 nm.

ΔA/min x 68500 = activity XE (IU/l)

Results obtained and their analysis: After 14 days, the amount of the corresponding hormones in the blood serum of the animals in the control group was compared with the amount of enzymes in the blood serum of the animals participating in the experiment, and tables were compiled for each enzyme.

The level of the cholinesterase enzyme in the blood serum is determined to assess the synthetic function of the liver. A decrease in the concentration of this enzyme usually occurs with a decrease in the albumin content and an increase in transaminase activity. If the enzyme activity returns to normal, liver function

returns to normal. The test is used to examine patients who have been exposed to toxic chemicals based on organophosphorus agents. These substances reduce the level of cholinesterase and pseudocholinesterase in the blood. In acute poisoning, characteristic symptoms develop quickly, in chronic poisoning - slowly. Insecticides can enter the body by inhalation, ingestion, or skin contact. Pseudocholinesterase deficiency can be hereditary. This enzyme neutralizes succinylcholine in the body, a muscle relaxant used during surgery. If the level of pseudocholinesterase in the blood is low after pain relief, the effect of drugs may last longer than usual, and there is a risk of prolonged muscle paralysis and suffocation.

It is known that lipase enzyme activity is important in the gastrointestinal tract. ZPL and ZJPLP are the main components of cholesterol, which in some cases and when the level of ZYULP decreases, accumulate in the vessels in the form of atherogenic clots, which, undoubtedly, is one of the causes of various complications in the form of angiopathy of diabetes. The state of lipid metabolism in the liver of rats can be characterized by the effect of plant-derived preparations, free fatty acids can be examined by activating peripheral lipolysis in adipose tissue. An increase in the content of triglycerides and cholesterol, accompanied by an increase in the content of 10% fatty acid esters and 24% cholesterol esters, causes changes in liver function. When antioxidant drugs are used, a significant increase in liver lipids is observed.

Conclusion

The effect of "ASKOLIT" tea on enzymes was examined after it was given to experimental rats for 14 days and compared with the case when tea was not given. According to the comparative results, ASKOLIT tea was able to combat intestinal inflammation and colitis.

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