smell, therefore the plant is called maiden chrysanthemum. White or yellow flowers are collected in a dense, sometimes spherical basket, inflorescences can reach 3 cm in diameter. They are collected at the top in the form of thyroid inflorescences. The fruit of the plant is dry, brown-yellow seeds. Tanacetum parthenium is widely cultivated in Europe and Ukraine.

According to literary sources, the chemical composition of Tanacetum parthenium is represented by phenolic compounds - hydroxybutyric acids (chlorogenic, dicfeoiloquin, chicory, etc.), flavonoids, sesquiterpene lactones (parthenolide, artecanin, chrysanthemum, cymorphin, camphorine, camphorimifene, etc.). Among flavonoids, flavones and flavonols predominate, with a large percentage being lipophilic flavonoids, namely the methyl esters of the flavonols 6-hydroxy Kempferol and quercetagetin.

For medicinal purposes the herb is collected during flowering, which has anti-inflammatory, antispasmodic, cardiotonic action. It is used in the form of infusions for fever, dizziness, arthritis, colitis, menstrual disorders, menopause. In the form of lotions, herbs are used in dermatological diseases of the skin, accompanied by itching. Tanacetum parthenium is widely used abroad as a major component of biologically active additives for the treatment and prevention of migraines in the form of capsules and tablets (Migranol®, MigraHerb®, Feverfew grande chamomile®, Feverfew® Swanson, etc.).

Previous scientific studies show that Tanacetum parthenium extracts protect the skin and reduce the effects of certain negative factors (ultraviolet radiation, inflammation triggers, etc.) due to its antioxidant properties. This has been proven by studies in skin cell culture, in which Tanacetum parthenium extract attenuated the formation of hydrogen peroxide induced by UV radiation, reduced the release of anti-inflammatory cytokines, enhanced endogenous defense mechanisms and promoted the repair of damaged cellular DNA. In vivo topical administration of Tanacetum parthenium extract reduced UV-induced epidermal hyperplasia and DNA damage. In addition, the extract was found to have antiradical activity against a wide range of free radicals, which exceeds the activity of vitamin C. Anti-inflammatory activity of the extracts of this plant was also confirmed in clinical studies, which significantly reduced erythema compared with placebo.

The urgent question today is the development of plant-based dosage forms in view of the pharmacological activity of Tanacetum parthenium.

Zamorskii I.I.

ANTITHROMBIN DNA APTAMERS AS A RENOPROTECTIVE AGENTS AGAINST THE RHABDOMYOLYSIS-INDUCED ACUTE KIDNEY INJURY

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Rhabdomyolysis is the rapid destruction of skeletal muscles and often results from muscle damage due to compression or crushing in severe injuries (e.g., crush syndrome) or the effects of nontraumatic factors, such as certain drugs, alcohol, myotropic poisons, microbial toxins, strenuous exercise, convulsions, hyperthermia, thrombosis, metabolic or electrolyte disturbances, and endocrine or autoimmune disorders (Torres P. A. et al., 2015). Myoglobin released from myocytes during myolysis causes acute kidney injury (AKI) due to macromolecules peroxidation, vasoconstriction, inflammation and apoptosis in kidney tissue, obstruction of renal tubules with myoglobin casts, and urothrombosis. Disseminated intravascular coagulation may develop as a consequence. In view of this, we focused on antithrombin DNA aptamers as a new class of direct inhibitors of thrombin, which is a key component of blood clotting. Aptamers are single-stranded DNA or RNA molecules of 30–60 nucleotides that have high affinity and specificity for their target and are functional analogs of monoclonal antibodies by specificity and affinity. Single-stranded nucleic acids that act as aptamers have a highly organized tertiary structure, which allows the aptamers to form stable specific complexes with various targets, in particular, thrombin (Spiridonova V. A. et al., 2015). The objective of this work was to study the effect of some original

antithrombin DNA aptamers on the course of experimental AKI due to rhabdomyolysis induced by intramuscular injection of a hyperosmotic glycerol solution.

Experiments were conducted on 59 non-linear male white rats, which were divided into five groups: control; model pathology; and three rhabdomyolysis groups treated with DNA aptamers (TBA31, REM27, and REM29). DNA aptamers were daily administered intraperitoneally at a dose of 0.5 mg/kg body weight for 3 days prior to modeling myoglobinuric AKI. Rhabdomyolysis and subsequent kidney injury was induced by the intramuscular injection of 50% glycerol solution at a dose 10 mL per 1 kg body weight. The renoprotective efficacy of the aptamers was evaluated 24 h after modeling AKI.

As the results demonstrate, signs of the oliguria stage of rhabdomyolysis-induced AKI became detectable by the end of day 1 in rats of the model pathology group. Treatment with the antithrombin DNA aptamers decelerated progression of AKI due to rhabdomyolysis and facilitated restoration of the kidney function. As an example, the diuresis in rats treated with the DNA aptamer REM27 was 12.4% higher than in the pathology group. The DNA aptamers REM27 and REM29 increased the glomerular filtration rate by 41 and 64%, respectively. REM29 was 17% more efficient than REM27 in restoring the glomerular filtration rate; it reduced creatinine retention in the body, increased creatinine clearance, and significantly increased tubular water reabsorption. Proteinuria decreased by 69% on average; the difference between the aptamers was insignificant.

Thus, the antithrombin DNA aptamers exerted a protective effect in experimental rhabdomyolysis, probably by preventing of disseminated intravascular coagulation and urothrombosis in nephron tubules.

Богдан Н.С.

МІКРОБІОЛОГІЧНЕ ДОСЛІДЖЕННЯ НОВОГО КОМБІНОВАНОГО ПРЕПАРАТУ НА ОСНОВІ ПРОДУКТІВ БДЖІЛЬНИЦТВА

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Виразкова хвороба шлунка та дванадцятипалої кишки є одним з найпоширеніших захворювань у світі, що потребує створення та дослідження нових ефективних та безпечних лікарських засобів. Тому, розробка лікарських препаратів для лікування та профілактики виразки шлунку та дванадцятипалої кишки на основі ефективних та нешкідливих для здоров'я людей субстанцій є актуальним завданням для медицини та фармації, що сприяло створенню нового комбінованого вітчизняного лікарського препарату у формі гранул під умовною назвою «Проплантмед».

Вивчення мікробіологічних властивостей нового комбінованого препарату на основі фенольного гідрофобного препарату прополісу – «Проплантмед».

Дослідження на мікробіологічну чистоту препарату здійснено відповідно до Державної Фармакопеї України. Для досліджень використовували наступні поживні середовища: соєво-казеїновий бульйон, («HIMedia Laboratorles Pvt. Ltd India»), соєво-казеїновий агар («HIMedia Laboratorles Pvt. Ltd India»), тіогліколеве середовище для контролю стерильності («HIMedia Laboratorles Pvt. Ltd India») та Сабуро-декстрозний агар (Виробництво Індія, «HIMedia Laboratorles Pvt. Ltd India»).

Випробування на мікробіологічну чистоту проводили методом прямого посіву на рідкі поживні середовища. Нейтралізацію антибактеріальних властивостей досліджуваних зразків проводили інактиватором, який включає полісорбат-80 (30 г/л) і лецитин (3 г/л).

Для оцінки активності препарату використовували наступні тест-штамми мікроорганізмів: Staphylococcus aureus ATCC 25923, Escherichia coli ATCC 25922, Pseudomonas aeruginosa ATCC 27853, Basillus subtilis ATCC 6633, Proteus vulgaris ATCC 4636, Candida albicans ATCC 885/653.

Приготування мікробної суспензії мікроорганізмів проводили з використанням приладу Densi-La-Meter (PLIVA-Lachema, Чехія за довжини хвилі λ=540 нм). Мікробне