



Thus, under conditions of spontaneous diuresis trental and xanthinol nicotinate increase the excretion of potassium ions after being injected for a long period of time. Potassium-uretic effect of xanthinol necotinate has been proved to be less significant in comparison with trental concerning the safety of preparation.

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**DETECTION AND QUANTIFICATION OF POLYSACCHARIDES IN MEDICINAL RAW OF PEONY
SORTS «ALBA PLENA» AND «ROSEA RLENA»**

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Peony (*Paeonia officinalis* L.) is a perennial herb of the Paeoniaceae family. In folk medicine roots and rhizomes are widely used as analgetic, anticonvulsant, anti-inflammatory, sedative, expectorant, diuretic, antispasmodic, hemostatic agent.

The analysis of published data shows that the chemical composition of roots and rhizomes of peony is represented by such class of biologically active compounds as simple phenols, flavonoids and tannins.

In Ukraine many varieties of ornamental peony grow, the most popular are «Alba plena» and «Rosea plena». Therefore, a phytochemical study of the leaves and rhizomes with roots of varieties of cultivated peony is very important to expand the resource base of medicinal peony and conservation of wild specimens of plants. Water extracts were obtained to identify the polysaccharides in the studied raw material. The presence of polysaccharides confirmed by adding fourfold volume of 96% ethanol, as the result the formation of opalescence was observed. To determine the nature of these polysaccharides qualitative reactions were conducted.

Reaction with 5% sodium hydroxide – in the extract from the rhizomes with roots of both species a light brown color and yellow-green in the extract from the leaves were seen. White voluminous precipitate was formed after adding 10% solution of lead acetate to the colored solution. Reaction with concentrated hydrochloric acid – the extract from the rhizomes with roots of leaves of peony varieties «Alba plena» and «Rosea plena» was of a light yellow color. After adding ethanol opalescence was formed. Thus, in all the studied feedstocks of peony the presence of mucus was found.

The quantitative content of polysaccharides in leaves and rhizomes with roots of peony varieties «Alba plena» and «Rosea plena» was determined by gravimetry method. The results of quantitative determination of polysaccharides content in raw material of peony varieties «Alba plena» and «Rosea plena» are given in the table.

Table

The quantitative content of polysaccharides in leaves and rhizomes with roots of medicinal peony varieties «Alba plena» and «Rosea plena»

Numbers	Raw material	Quantitative content of polysaccharides % in terms of absolutely dry raw material (m = 5)	
		Sort «Alba plena»	Sort «Rosea plena»
1.	Leaves	6,69±0,30	5,53±0,25
2.	Rhizomes with roots	4,81±0,21	5,61±0,27

Note. Probability of error $P \leq 0,05$

As the table shows, the greatest number of polysaccharides accumulate in the leaves of peony of sort «Alba plena», and the smallest – in roots with rhizomes of peony of the same kind.

Therefore, this study enables to recommend the leaves and roots with rhizomes of peony varieties «Alba plena» and «Rosea Plena» for further depth phytochemical study to develop projects of quality control methods and new effective domestic drugs.

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PREVENTION OF GENTAMICIN-INDUCED KIDNEY INJURY BY PINEAL TETRAPEPTIDE

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Kidney injury of different degree occurs in 30% of patients treated with aminoglycosides for more than 7 days, being the reason for serious limitation of their use (A. Muthuraman et al., 2011). Search for drugs able to mitigate the toxic effects of aminoglycosides is an active area of research (B.H. Ali et al., 2011).

The aim of our study was to estimate the nephroprotective potential of tetrapeptide AEDG (L-alanyl-L-glutamyl-L-aspartyl-glycine) synthesized in the St.-Peterburg Institute of Bioregulation and Gerontology (RF) on a model of gentamicin-induced kidney injury in rats.

Experimental study was conducted on 21 non-linear white rats weighting 150-180 g, divided into three groups (n=7): I group – control, II group – animals with gentamicin-induced kidney injury caused by administration of 4% gentamicin sulfate solution in dose 80 mg/kg once a day during 6 days. Animals of the III group received AEDG (7 µg/kg, i.p.) after each gentamicin injection. Kidney function was assessed by diuresis, glomerular filtration rate (GFR), plasma creatinine concentration, urine protein excretion and fractional excretion of sodium. Histopathological



examination by light microscopy was conducted to confirm the research results. Data were compared by Mann-Whitney test using SPSS Statistics 17.0.

Administration of gentamicin during 6 days resulted in the toxic kidney injury, manifested in the decrease of diuresis by 54% ($p < 0.01$), increase of plasma creatinine concentration by 3.3 times on the background decrease of GFR by 73% ($p < 0.01$) and significant proteinuria with an increase of protein excretion by 57% ($p < 0.01$) comparing to control. Proximal tubular injury caused an increase of fractional sodium excretion up to 4.55% ($p < 0.01$). Biochemical data correlate with histopathological findings: vacuolar degeneration affected 30%, epithelial necrosis – 70% of proximal tubular cells, the lumen of the tubules were filled with hyaline casts, glomerular congestion and their partial atrophy were also observed.

Co-treatment with AEDG decreased the severity of renal injury realized in preclusion of oliguria (increase of diuresis by 81% ($p < 0.01$) comparing to untreated animals), prevention of retention azotemia (decrease of plasma creatinine concentration by 2.8 times, $p < 0.01$), reduction of proteinuria by 40% ($p < 0.05$) and normalization of sodium fractional excretion (to 0.73%, $p < 0.01$). Protective effect of peptide is confirmed by the absence of epithelial necrosis, glomerular atrophy, luminal hyaline casts and potentially reversible hydropic swelling of 91% of the proximal tubular cells.

Obtained results suggest the therapeutic potential of tetrapeptide AEDG under the conditions of gentamicin-induced kidney injury confirmed by the amelioration of excretory kidney function and histopathological changes.

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RARE MEDICINAL PLANTS OF CHERNIVTSI REGION

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In Bukovina region 573 species of wild plants with medicinal properties grow. There are 49 rare and endangered species among them. The Red Book of Ukraine includes 38 species of medicinal plants, 11 species are protected at the regional level. Nature reserve fund of Chernivtsi region occupies almost 8% of the territory, the majority of the rare medicinal plants grow on 29118 ha (only landscape, forest and botanical zone are considered).

Chernivtsi region includes three natural zones - Prut-Dniester interfluvium, Bukovinian Precarpathians and Bukovinian Carpathians.

In the area between the Prut-Dniester interfluvium 32 species of rare medicinal plants grow. Among them there are the types of populations occurring "often". These are: *Pulsatilla latifolia* Rupr., *Lilium martagon* L., *Neottia nidus-avis* (L.). In the area between the Prut-Dniester interfluvium 40 protected areas with the territory of 5227.9 hectares are marked. In Bukovinian Carpathians 33 species of rare medicinal plants grow, most of them occur in 45 protected areas on the territory of 8577.9 hectares. In the foothill landscapes populations of rare medicinal plants are often found: *Atropa belladonna* L., *Colchicum autumnale* L., *Cephalanthera longifolia* (L.), *Dactylorhiza majalis* (Reichend.), *Neottia nidus-avis* (L.) Rich., *Orchis morio* L., *Platanthera bifolia* (L.). Among them there are officinal types – *Atropa belladonna* L. This plant grows lonely in all natural areas of Bukovina. In Bukovinian Carpathians 35 species of medicinal plants are found. There are plants which populations are often found and belong to a small taxon risk: *Lycopodium annotinum* L., *Astrantia major* L., *Colchicum autumnale* L., *Dactylorhiza majalis* (Reichend.), *Neottia nidus-avis* (L.), *Platanthera bifolia* (L.), *Traunsteinera globosa* (L.). A popular medicinal plant that grows in mountain meadows is *Arnica montana* L. In Bukovina it belongs to the taxon of a small risk. Totally in Bukovinian Carpathians there are 17 natural protected areas, occupying the territory of 15312.2 hectares.

Medicinal plants that require protection, by distribution of population in the territory of Bukovina region are divided as follows: 6 rare species, 17 vulnerable species and 26 taxons of a small risk. Considering cenotop most of the rare plants are sylvants (28 species), or pratants (11 species). By the anthropogenic factor – all plants are urbanophobs. One of the measures of protection is the compulsory monitoring of populations' condition.

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THE RELEVANCE OF ESTABLISHMENT A NEW COMBINED OIL PHYTOEXTRACT WITH HEPATOTROPIC ACTION

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Liver disease is any condition that may cause liver inflammation or tissue damage and affects liver function. It afflicts over 10% of the world population. This includes chronic hepatitis, alcoholic steatosis, fibrosis, cirrhosis and hepatocellular carcinoma, which are the most healththreatening conditions attracting considerable attention from medical professionals and scientists.

Hepatitis with the impaired biliary excretion, as well as inflammatory diseases of the liver and gallbladder are the widespread human diseases, first of all among people of the middle and senior age. The timely treatment of the pathologies mentioned prevents development of chronic diseases and improves the quality of the patients' life.

Approximately 25% of the drugs prescribed worldwide at present come from plants and 60% of anti-infectious drugs already on the market or under clinical investigations are of natural origin. According to the WHO, the