

17-22. []// . - 2002. - 2. - .
 26. / . . - . : ,
 - 2000. - 668 .
 27. « »
 »
 2001.- 3 (27).- . 161.
 28. Morris K.P., *Non cardiac benefits of human erythropoietin in*
615.322:615.254.7

endstage renal failure and anemia / K.P. Morris, J. Sharp, S. Watson [et al.]//Arch. Dis. Child. 1993.- N 69.- P. 580-586.
 29. Uribarri J. *A reevaluation of the minary parameters of acid production and excretion in patients with chronic renal acidosis /J. Uribarri, H. Douyon, M.S. Oh //Kidney Int. 1995.-N47.-P.624-627.*
 30. Vasta E.*Induction of specific transport system for L-arginine in human platelets /E. Vasta, M. Meacci [et al.]//Biochem. Biophys. Res. Commun. 1995.- Vol. 206, N3.-P. 878-884.*

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N.V. Popova, S.I. Dikhtyarev, N.F. Maslova,
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HEALING OF KIDNEY DISEASES WITH HERBAL DRUGS

Key words: kidney, medications, natural compounds, flavonoids
 In the article the results of the generalization of market of medicinal preparations are presented for a prophylaxis and treatment on the basis of natural compounds which can be utilized as potential substances for application as medications and in particular flavonoids for a prophylaxis and treatment of kidney diseases.

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[2, 6].

[3, 7, 11].

« »

[4, 9].

- ;
- « » ;
- ;
- ;

(« ») [5, 12].

() .

[6, 8].

- 100 1

1. . . . *Neisseria meningitidis*: / . . . , 2000. - P. 217 .
2. Daniell H. Medical molecular farming: production of antibodies, biopharmaceuticals and edible vaccines in plants / H. Daniell, S. Streatfield, K. Wycoff // *Trends in Plant Sci.* - 2001. - Vol. 6. - P. 219-226.
3. Haq T. Oral immunization with a recombinant bacterial antigen produced in transgenic plants / T. Haq, H.S. Mason, J. Clements et al. // *Science.* - 1995. - Vol. 268. - P. 714-716.
4. Kapusta J. A plant-derived edible vaccine against hepatitis B virus / J. Kapusta, A. Modelska, M. Figlerowicz et al. // *FASEB J.* - 1999. - Vol. 13. - P. 1796-1799.
5. Mason HS Edible plant vaccines: applications for prophylactic and therapeutic molecular medicine / HS Mason, H Warzecha, MS Tsafir, CJ. Arntzen // *Trends Mol. Med.* - 2002. - Vol. 8 - . 324-329.
6. Mor TS Gemini virus vectors for high level expression of foreign proteins in plant cells / TS Mor, YS Moon, KE Palmer, HS. Mason // *Biotechnol. Bioeng.* - 2003. - Vol. 81- . 430-437.
7. Richter L. Production of hepatitis B surface antigen in transgenic plants for oral immunization / L. Richter, Y. Thanavala, C. Arntzen et al. // *Nature Biotechnol.* - 2000. - Vol. 18. - P. 1167-1171.
8. Ruf S. Stable genetic transformation of tomato plastids and expression of a foreign protein in fruit / S. Ruf, M. Hermann, IJ Berger [et al.] // *Nat. Biotechnol.* - 2001. - Vol. 19 - . 870-875.
9. Streatfield S., Plant-based vaccines: unique advantages / S. Streatfield, J. Jilka, E. Hood [et al.] // *Vaccine.* - 2000. - Vol. 19. - P. 2742-2748.
10. Tacket C. A review of oral vaccination with transgenic vegetables / C. Tacket, H. Mason // *Microbes and Infection.* - 1999. - Vol. 1. - P. 777-783.
11. Tacket C. Human immune responses to a novel Norwalk virus vaccine delivered in transgenic potatoes / C. Tacket, H. Mason, G. Losonsky [et al.] // *J. of Infectious Diseases.* - 2000. - Vol. 182. - P. 302-305.
12. Walmsley A. Plants for delivery of edible vaccines / A. Walmsley, C. Arntzen // *Current Opinion in Biotechnol.* - 2000. - Vol. 11. - P. 126-129.
13. Yu J. A plant-based multicomponent vaccine protects mice from enteric diseases / J. Yu, WH. Langridge // *Nat. Biotechnol.* - 2001. - Vol. 19 - . 548-552.

15.06.2011

615.371:578.74

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**PLANT VACCINES AND PERSPECTIVE FOR
 THEIR USE**

Key words: vaccines, immunologic drugs, genetic engineering, biotechnology

The survey provided the information about the current status of plant vaccine production, the vaccines used and their components. The composition and general principles of vaccine production were described; the new generations of vaccines were characterized indicating advantages and disadvantages of each type and perspectives of their use in future.