


VOLUME 8

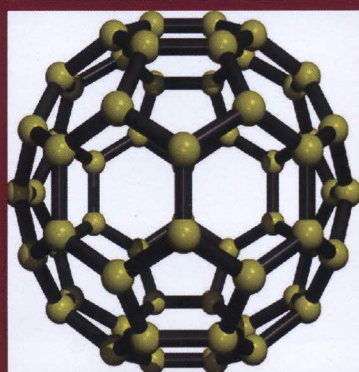
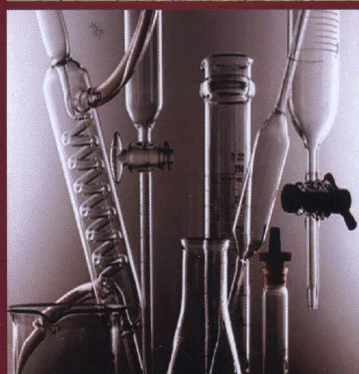
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1 H Hydrogen 1.00794					
3 Li Lithium 6.941	4 Be Beryllium 9.01218				
11 Na Sodium 22.98977	12 Mg Magnesium 24.305				
19 K Potassium 39.0983	20 Ca Calcium 40.078	21 Sc Scandium 44.9559	22 Ti Titanium 47.88	23 V Vanadium 50.9415	24 Cr Chromium 51.9961
37 Rb Rubidium 85.4678	38 Sr Strontium 87.62	39 Y Yttrium 88.9059	40 Zr Zirconium 91.224	41 Nb Niobium 92.9064	42 Mo Molybdenum 95.94



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Contents

<i>Nurseitova M., Muratova B., Toregozhina Zh., Jurjanz S., Konuspayeva G.1., Faye B.</i> Bioaccumulation and decontamination mechanisms of persistent organic pollutants (PCB, DDT) in bodies of Bactrian camels.....	4
<i>Abramova V.A., Kali A., Abdolla N., Yurikova O. Yu., Perfilyeva Yu. V., Ostapchuk Ye. O., Tleulieva R. T., Madenova S. K., Belyaev N. N.</i> Influence of tumor cells on natural killer cell phenotype and cytotoxicity.....	9
<i>Pozharskiy A. S., Chekalin S. V.</i> Molecular study of <i>Berberis iliensis</i> M. Pop. and <i>Berberis sphaerocarpa</i> Kar. et Kir. wild populations in South-East Kazakhstan using ISSR markers.....	15
<i>Turasheva S. K.</i> Production of wheat doubled haploids by in vitro anther culture.....	21
<i>Zhussupova A. I., Gadetskaya A. V., Shalakhmetova T. M., Murzakhmetova M. K., Zhussupova G. E.</i> Natural antioxidants of plant origin.....	26
<i>Musa K. Sh., Abdrazak P. Kh.</i> The impact of the cosmodrome "Baikonur" on the environment and human health.....	32
<i>Nurxat N., Gussenov I., Tatykhanova G. Akhmedzhanov T., Kudaibergenov S.</i> Alkaline/Surfactant/Polymer (ASP) Flooding.....	36
<i>Bazarova A. Zh., Kairalapova G. Zh., Zhumagalieva Sh. N., Beisebekov M. K.</i> Synthesis and investigation of properties of cryogel based on polyacrylic acid	49
<i>Ikhsanov Y. S., Vizuite Castro P., Litvinenko Y. A., Burasheva G. Sh., Abilov J. A.</i> Phytochemical study of conditional phytopreparation and liposoluble contents of <i>halostachys caspica</i> with immunostimulatory activity	53
<i>Klivenko A. N., Tatykhanova G. S., Mun G. A., Kudaibergenov S. E.</i> Synthesis and physicochemical properties of macroporous cryogels.....	58
<i>Nurgaziyeva E. K., Tatykhanova G. S., Mun G. A., Khutoryanskiy V. V., Kudaibergenov S. E.</i> Oxidation of Cyclohexane Mediated with Gel-Immobilized Gold Nanoparticles.....	67
<i>Buribayeva M. S., Kunakbayeva A., Abebova L., Irmukhametova G. S., Muldagulova K. B., Mun G. A.</i> Transdermal study of hydrogel ointments and bandages with antituberculosis activity.....	73

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Natural antioxidants of plant origin

In pharmacotherapy and prevention of “free radical diseases”, including diseases of the cardiovascular system, gastrointestinal tract, malignancies, herbal medicinal products become important, the effect of which is based on synergistic action of the major groups of natural compounds, such as polyphenols (mainly condensed tannins and flavonoids), amino, phenolic, polyene carboxylic acids, vitamins and minerals. Herbal substances of antioxidant action obtained on the basis of Kazakhstani plants are presented and described. The allocated herbal substances are notable by their bioavailability, low toxicity, absence of allergic reactions and cumulative effects, possibility of their long-term use for treatment and prevention of diseases.

Key words: antioxidant action, Limonium Mill, polyphenols.

Introduction

According to the World Health Organization the Republic of Kazakhstan takes the leading position among the countries of Central Asia on the prevalence of “free radical diseases”. The pathogenesis of these diseases reclines on common fundamental mechanisms of damage to biological membranes of body tissues associated with the increased formation of free radicals and peroxide compounds of organic and inorganic nature [1-2]. Main substrates of free radical oxidation are unsaturated lipids. A necessary condition for cells functioning is to maintain normal levels of free radical oxidation. Marked and prolonged exposure to lipid peroxidation leads to decrease in the content of biological membranes of more easily oxidized polyunsaturated fatty acids with a simultaneous increase of the fatty acid radicals and secondary products of lipid peroxidation. The damaging effect of lipid peroxidation products on cell is caused by forming hydrophilic channels in a lipid layer of membranes dramatically violating their permeability, inactivation of energy generating thiol enzymes, uncoupling of oxidative phosphorylation, which, in turn, results in the cleavage of membrane lipids, alteration of lipid-protein interactions and other irreversible consequences.

Speed and regulation of lipid peroxidation is performed by multicomponent antioxidant system [3], which provides binding and modification of free

radicals, preventing the formation and destruction of peroxides, shielding the functional groups of proteins and other biomolecules. The ratio of the intensity of free radical oxidation and antioxidant activity defines the so-called status of cells, tissues and body as a whole. Aging, cardiovascular diseases, cancer, disorders of the central and peripheral nervous systems, acquired immune deficiency syndrome, diabetes, arthritis, cataracts, asthma, diseases of the gastrointestinal tract as well as other inflammatory diseases are caused or accompanied by oxidative stress, failure or defect in the physiological antioxidant defense system in a state of indivisible unity with other human defence systems – hemoprotective and immune [4-6].

To correct the imbalances of the body caused by hyperoxidation and leading to such pathological conditions, use of drugs with antioxidant action is recommended. In this regard, search of compounds with high antioxidant activity or estimation of the biological activity of this type for traditionally used drugs has great medical and general biological significance. Antioxidants, which are substances present in the systems at significantly lower concentrations compared to the oxidized substrate and inhibiting its oxidation, are used for prevention and complex therapy of peroxide pathologies [7-9].

Among the substances with antioxidant, immunostimulating and other adaptogenic properties are substances with high biological activity, derived from herbal raw materials occupy an important place.