

minutes with -17,1% and +19,1%; on 60 minutes with -21,8% and +18,7%; on 120-240 minutes, reduced blood pressure was stable with -29,4 and the frequency of heart contraction remain in initial limits; at 300-360 minutes was found a maximum hypotensive effect of -38,9%, return to the initial level to the 6<sup>th</sup> hours the same FHC. Breath initially shows a tendency to tachypnea to over 30 minutes, which reaches over 2 hours the initial fissures following that and then to shrink over 5 hours till the minut values (54,7 +/- 7,6 compared with 96,6 +/- 7,8;  $1 < 0,05$ ). Isothioureic-benzyturon derivative shows marked hypotensive action, slow and long with maximum effect and stable between 2-7 hours after administration, with a moderate reflectory tachycardia.

## Prospects for the Development of Chemotherapeutic Drugs on the Basis of Humic Substances Silt Muds

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**Purpose:** Study of the influence of drugs peloid humic series and their derivatives on various types of microorganisms, as a promising basis for the development of chemotherapeutic drugs. **Materials and methods:** We investigated the various fractions of humic substances low mineralized silt sulphide muds (peloids) lake Molochka sanatorium "Sergievsk mineral water": hymatomelan [HMA], fulvic [FA], humic [HA] and humus [HsA] acid (concentrations 0,25%, 0,1%, 0,01%). We investigated the chelate complexes of humic substances peloids with ions of mercury (II), silver ions, iron ions (II), zinc ions in the same concentrations. To determine the antimicrobial activity of substances was used the test-cultures of microorganisms: 1) Gram-negative bacteria - *Escherichia coli* (ATCC 25922), *Pseudomonas aeruginosa* (ATCC 27853). 2) Gram-positive bacteria - *Staphylococcus aureus* (ATCC 25293), *Bacillus subtilis* (ATCC 6633). 3) Yeast-like fungi - *Candida utilis* (LIA-01). Antimicrobial activity of peloids preparations was determined by their diffusion in Mueller-Hinton agar, which was carried out payment of the investigated test-culture. Active component of the derivatives of humic substances is a metal cation. Options humic components: 1. Masking bactericidal component; 2. Tropism drug to microorganisms; 3. Increased permeability through biological membranes; 4. Reducing the toxic effect of metals on macro-organisms. The results showed that hymatomelan, fulvic, humic, humus acid peloids not have lytic activity against the studied microorganisms. But often a static activity to an increase in *E. coli*, *Ps. aeruginosa*, that is, all that we have studied Gram-positive microorganisms. Stimulate the growth of the investigated Gram-positive microorganisms - *St. aureus*, *B. Subtilis* with respect to the control. Also show catalytic activity to the growth of *C. albicans* at concentrations of less than 0.1%, and no effect at concentrations more than 0.1%. All investigated chelate complexes of humic substances with ions of mercury (II), silver ions, iron ions (II), zinc ions in all investigated concentrations exhibit lytic activity against the test-cultures of microorganisms. The lowest antimicrobial activity among the studied peloids preparations showed fulvic acid chelate complexes with ions of zinc and iron (II) - a zone of suppression of microbial growth less than 9 mm. The greatest antimicrobial effect of chelate complexes have 0,25% of humic substances: *E. coli* (zone growth suppression  $20 \pm 0,1$ mm) -  $HsA * Hg^{2+}$ ; *Ps. aeruginosa* ( $20 \pm 0,1$ mm) -  $HA * Ag^{+}$ ; *St. aureus* ( $24 \pm 0,1$ mm) -  $HA * Hg^{2+}$ ; *B. subtilis* ( $16 \pm 0,1$ mm) - chelate complexes of humic substances \*  $Ag^{+}$ ; *C. utilis* ( $25 \pm 0,1$ mm) -  $HA * Ag^{+}$ . The results characterize several humic preparations and their chelate complexes, as the optimum components for further elaboration on their basis of chemotherapeutic drugs of natural origin.