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Cytotoxic and antiradical activity of roseofungin

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The specialists in the Institute of Microbiology and Virology, Al-Farabi Kazakh National University and Nazarbayev University were engaged in the research and study of new antibiotics to increase the activity of producers of known antibiotics. Thus, a broad-spectrum antifungal polyene antibiotic, roseofungin was prepared for the treatment of deep and superficial mycoses. Physicochemical properties of roseofungin are investigated by L Vetlugina and R Dziubanova. Roseofungin is a mixture of two compounds differing only in one CH_2-group. Due to the difficulty of separation and very similar properties, these compounds were not divided in a pure form; therefore a specific formula for roseofungin has not yet been established. The culture liquid of roseofungin used for research was represented by specialists of the National Centre of Biotechnology (Stepnogorsk, Kazakhstan). The determination of antiradical, cytotoxic activity is necessary to establish the presence of potential biological activity in pentaenoic antibiotics, which will allow them to be used as medicines in the future. The cytotoxic activity of the roseofungin was determined by the compressibility of *Artemia salina*. On the basis of the experiments, it was found that the roseofungin at concentrations of 10 and 5 mg/ml exhibits moderate toxicity - the mortality of larvae is 72%, and at a concentration of 1 mg/ml exhibits low toxicity, mortality - 48%. The antiradical activity of the roseofungin is determined by the reactions of the inhibition of 2, 2-diphyl-1-picrylhydrazyl radical (DPPH assay). The results showed that the roseofungin has a low antiradical activity in comparison with the standard butylhydroxyanisole.

Biography

Iskakova Zhanar Baktybaevna is a candidate of chemical sciences, Associate Professor. She is the Head of the Department of Science and Post-Graduate Education and; Scientific Secretary of the Kazakh University of Technology and Business. She has about 100 scientific publications, the author of one patent, three teaching aids, one electronic textbook and a monograph. She is a Laureate in the nomination Springer Nature top of the most published scientists of Kazakhstan in the field of Biological Sciences and Biomedicine. She is engaged in determining the biological activity of essential oils extracted from plants, extracts and substances in the Institute of Applied Chemistry.

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