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had very high values. In particular, the biological BBmilk (Buona) had a value very close to that of M.

The influence of phytohormones on the morphogenesis in callus tissues of *Artemisia glabella*

Mukarram Zhussip, Serzhan Amanov, Askhat

Kuatbayev, Gulmira Satybaldyeva, Aizhan

Utarbayeva, Kazbek Shupshibayev, Ainagul Kaliyeva,

Aliya Bitkeyeva and Yelena Krasnopyorova

S. Toraighyrov Pavlodar State University, Pavlodar, Kazakhstan

The Karaganda State University of the name of academician E.A. Buketov, Karaganda, Kazakhstan

S. Seifullin Kazakh AgroTechnical University, Nur-Sultan, Kazakhstan

Innovative University of Eurasia, Pavlodar, Kazakhstan

email address: moka_094@mail.ru. It was found the effect of phytohormones on various morphological reactions of callus tissues of *Artemisia glabella*. With using the different methods the scheme of obtaining regenerant plants was revealed. Adding only auxins to medium content mainly to the formation of roots and there is an increase of callus mass. Rhizogenesis was observed when IAA was used in concentrations up to 2 mg/L. The use of cytokinins led to the induction of hemogenesis in the callus tissue. The maximum number of regenerants was obtained on a medium with a BAP of 1–2 mg/L. Increasing the concentration of cytokinins above 2 mg/L inhibited the process of hemogenesis. When combining different classes of phytohormones, the formation of structures similar to embryo–embryoids was observed. The predominance of kinetin over IAA in the medium contributes to the formation of embryoid-like structures. Optimal use of a combination was obtained at concentration of kinetin of 2 mg/L and IAA of 2 mg/L. It should be noted that subsequent subcultivation of embryoids on a medium with BAP at concentration of 1 mg/L leads to maturation of embryoids and the formation of a bush with multiple shoots.

The effect of the combination of betulin and nobiletin on the formation of Th2 cellular immunity at experimental influenza infection

Aizhan Turmagambetova, Andrey Bogoyavlenskiy,

Vladimir Berezin, Pavel Alexyuk, Madina Alexyuk,

Nadezhda Sokolova, Elmira Omirtaeva and

Irina Zaitceva

Research and Production Center for Microbiology and Virology, Almaty, Kazakhstan

email address: aichyck@mail.ru. The use of immunostimulating preparations for vaccination is limited

by the ability of these preparations to stimulate Th2 cellular immunity. Therefore, the research of stimulating of this link of immunity is an integral part of the study of immunotropic preparations. We studied the effect of the combination of betulin–nobiletin on the expression of the Th2 cellular immunity genes. Cytokines IL-4 and IL-10 were selected as markers. To study the expression of tested genes, a single immunization of white outbreed mice was carried out with the tested combination of betulin–nobiletin in a mixture with purified glycoprotein antigens (HA, NA) (GPAs) of the influenza virus strain A/Almaty/8/98 (H3N2). The dose of influenza virus GPAs was 10 µg/mouse; the dose of the studied immunostimulating combination was 45 µg/mouse. Macrophages were collected from animals 3 days after immunization. Level of selected cytokine genes expression was determined in real time PCR. The expression activity of the IL-4 and IL-10 Th2 cellular immunity genes after administration of betulin–nobiletin combination increased from four to eight times. Thus, immunostimulating combination of betulin–nobiletin enhances the expression of Th2 cellular immunity genes, which makes it possible to use such combinations in the development of new immunotropic preparations.

NGS and metagenomic studies of acute respiratory viral infections

Elmira Anarkulova, Andrey Bogoyavlenskiy, M.

Amanbayeva, Madina Alexyuk, Aizhan

Turmagambetova and Vladimir Berezin

Research and Production Center for Microbiology and Virology, Almaty, Kazakhstan

Abai Kazakh National Pedagogical University, Almaty, Kazakhstan

email address: aichyck@mail.ru. Acute respiratory viral infections (ARVIs) are prevalent worldwide. The main reason is the multiple cause of the disease. More than 80 etiological agents have been identified that ARVIs cause belonging to different families (Orthomyxoviridae, Paramyxoviridae, Adenoviridae, Pneumoviridae, Reoviridae etc). The ratio of pathogens among risk groups of children under 12 years old to adults after 50 varies within a few percent but makes up equal shares for ortho-, reo-, and pneumoviruses (~75%). The remaining viruses of this group account for no more than 25% of the number of cases. We carried out a comparative research of environmental samples using the method of massive parallel sequencing to study the presence of ARVIs pathogens reads.