**VAZORELAXANT EFFECT OF THE PC-3 AND PC-2 POLIFENOL COMPOUNDS DEPENDING ON THEIR CHEMICAL STRUCTURE**

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**Introduction.** Nowadays, polyphenol compounds have been isolated from more than 400 plants, and the classification, synthesis/biotransformation of these polyphenols and a wide range of pharmacological activity have been studied in detail by many researchers. One of the potential sources of polyphenols are *Euphorbia* plant species. The *Euphorbia* plant species are the most common species in the mountainous region, with two or perennial grasses. In folk medicine *Euphorbia* plants are used as an antipyretic, analgesic, as well as in the treatment of gastritis, tonsillitis, anti-inflammatory, blood pressure, liver disease, malaria treatment.

**Aim**. The aim of this work is the determination of vasorelaxant activity of the new polyphenol compound isolated from *Euphorbia* plants growing in Uzbekistan.

**Materials and methods.** Aortic vascular preparation was performed using standard methods.

The results are presented in the form of Mm of the results of experiments performed in n times, where M represents the arithmetic mean and m represents the standard error value. Also, the results of the experiments were calculated based on the Student's t -test on statistical significance of values ​​between groups and were estimated as statistically significant at \* - Р<0.05; \*\* - Р<0.01; \*\*\*- Р<0.001 Origin 6 (OriginLab Corporation, USA).

**Results.** Due the beneficial effects of polyphenols to numerous disease states, including the cardiovascular diseases, studies has been performed to determine the vasorelaxant effects of polyphenol compounds PC-3 and PC-2 isolated from *Euphorbia* plants. Obtained data revealed that polyphenol compounds PC-3 and PC-2 have a significant vasorelaxant effect on isometric contraction activity (*in vitro*) of the rat aorta by pretreatment of the 50 mM KCl. Specifically, it was found that PC-3 at the minimum concentration of 10 μM reduces the compressive strength by 9.4 ± 3.8% and at a maximum concentration of 60 μM (n = 4–6) to 70.6 ± 5.1% compared to the control. It was also observed that the PC-2 at a minimum concentration of 5 μM reduces the compressive strength by 29.5 ± 4.9% and at the maximum concentration30 μM to 89.4 ± 5.3% compared to the control. The (EC50) values ​​for PC-3 and PC-2 were 33.9 µM and 9.6 µM, respectively.

**Conclusions.** Polyphenols - PC-3 and PC-2 have a relaxant effect and effectively relieve hypercalcium solution and phenylephrine-induced rat aortic contraction. It is obtained that PC-2 has more pronounced vasorelaxant effect. The scientific/experimental results could be used as a theoretical basis for the development of antiperentative pharmacological drugs based on polyphenols.