МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ

НАЦІОНАЛЬНИЙ УНІВЕРСИТЕТ БІОРЕСУРСІВ І ПРИРОДОКОРИСТУВАННЯ УКРАЇНИ

ФАКУЛЬТЕТ ВЕТЕРИНАРНОЇ МЕДИЦИНИ

Міжнародна науково-практична конференція
«Контроль безпечності харчових продуктів.
Україна-ЄС: невирішені питання»
в рамках реалізації проекту за підтримки програми Жана Моне
«Контроль безпечності харчових продуктів у ЄС»
присвячена 120-річчю Національний університет біоресурсів і природокористування України

МАТЕРІАЛИ КОНФЕРЕНЦІЇ
19–20 квітня 2018 року, м. Київ

International scientific and practical conference
«Food Safety Control. Ukraine-EU: Unsolved Questions»
under Erasmus+ Jean Monnet Project
«EU Food Safety Control»
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УДК 577.151.6:612.115

EXTRACELLULAR ANNEXINS IN HEMOSTASIS SYSTEM. PLASMINOGEN INFLUENCE ON ANNEXIN A5 EXPOSURE.

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Annexins are the family of calcium-dependent phospholipids proteins. These proteins have been shown to take part in many important biological processes, such as exocytosis, endocytosis, inhibition of blood coagulation, regulation of ion transport across membranes, membrane reorganization, vascular trafficking and redox regulation. In the present work we mostly paid attention to those members of annexin family that can be found in the mammalian hemostasis system. Normally annexins are not secreted from the living cells, and appearance of these proteins in bloodstream is considered as a result of cell degradation or apoptosis. For annexins A1, A2 and A5 the extracellular activity has been shown. Annexin A2 is an endothelial receptor for plasminogen and tissue plasminogen activator, and annexin A1 is considered as an anti-inflammatory agent. Annexin A5 is shown as an anticoagulant protein according to its ability to bind phosphatidylserine on the surface of activated platelets. In our previous investigations we showed that exogenous Lys-plasminogen, which possesses an open conformation, inhibits platelet aggregation and suppresses platelet alpha-granule secretion. The native form of plasminogen (Glu-plasminogen) has no significant influence on the above-mentioned process. We suggested that plasminogen effect, which was shown during platelet aggregation and secretion, can be observed at the step of procoagulant phospholipid membrane formation, i.e. phosphatidylserine exposure on the platelet surface. In our experiments we used FITC-conjugated annexin A5 to investigate plasminogen effect on phosphatidylserine exposure. According to our data, Glu-plasminogen preincubated with washed mammalian platelets leads to the increased exposure of annexin A5 on the platelet surface after the thrombin stimulation. The observed effect suggest that the native form of plasminogen can be involved in pro-apoptotic events, which take place in platelets after their activation. So, annexin A5 can be considered as a marker of activated or apoptotic platelets and its determination in blood and on the surface of blood cells or endothelium can be very important for the diagnosis and treatment of hemostasis disoders.