Amblyomin-X

National Cancer Institute

Source

National Cancer Institute. Amblyomin-X. NCI Thesaurus. Code C148521.

A recombinant form of a toxic protein derived from the salivary glands of the Amblyomma cajennense tick that inhibits Factor Xa and induces apoptosis, with potential antithrombotic and antineoplastic activities. Upon administration, amblyomin-X promotes endoplasmic reticulum (ER) stress, mitochondrial dysfunction, cytochrome-c release, poly(ADP-ribose) polymerase (PARP) cleavage, and activation of caspase. Additionally, this agent selectively induces apoptosis in tumor cells. It also affects endothelial cell functions, such as adhesion, and may inhibit angiogenesis. Amblyomin-X targets and binds to factor Xa, inhibits its activity and interrupts the blood coagulation cascade, thereby preventing thrombin formation and thrombus development. As cancer is associated with thrombosis, amblyomin-X could potentially exert its antineoplastic and antithrombotic effects in the cancer patient at the same time.