EFFECT OF *Crataeva tapia* BARK PROTEIN (CRATABL) ON THE PROSTATE CANCER CELL LINES (DU145, PC3) SECRETOME ENZYMES

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**Introduction:** Secreted proteins from cancer cells play a key role in cell signaling, communication and migration. CrataBL, in addition to its lectin activity, inhibits factor Xa and trypsin, binds to heparin and other sulfated glycosaminoglycans. CrataBL induces prostate cancer cell line death by apoptosis mechanism resulting in the release of mitochondrial cytochrome c and activation of caspase-3.

**Objectives:** To monitor the conformational behavior of CrataBL at different temperatures, in the presence of heparin or trifluoroethanol (TFE), and characterize its effect on phosphatase and peptidase activities secreted by prostate cancer cell lines. **Material and Methods:** The prostate cancer cell line (DU145 and PC3) secretomes were incubated with \(p\)-nitrophenyl phosphate, \(H\)-\(D\)- Pro-Phe-Arg-AMC, Ac-Asp-Glu-Val-Asp-AMC in the presence or absence of CrataBL and/or heparin for screening the hydrolytic activities. The inhibitory activity of CrataBL on tissue kallikrein 3 (KLK3) was also assayed using as substrate Abz-KLYSSKQ-EDDnp. **Results and Discussion:** Melting temperature (\(T_m\)) of CrataBL is ca. 75°C and heparin causes conformation changes in its structure. TFE increased the alpha helix content of CrataBL and also its lectin activity. Cell secretomes did not hydrolyzed \(p\)-nitrophenyl phosphate and Asp-Glu-Val-Asp-AMC, but released AMC from \(H\)-\(D\)-Pro-Phe-Arg-AMC. Heparin significantly increased this peptidase activity. CrataBL, in a dose-dependent manner, inhibited this hydrolytic activity, in either the presence or absence of
heparin. KLK3 was similarly inhibited. **Conclusions:** Secretome enzymes from DU145 and PC3 cells have arginyl hydrolase activities inhibited by CrataBL that was better noticed when assayed in the presence of heparin. Further studies are in progress to identify CrataBL targets by using CrataBL-Sepharose matrix.

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