

**6th International Conference and Expo on
Immunology****October 24-26, 2016 Chicago, USA****Scorpion venoms causing DNA damage by up-regulating p⁵³ and down regulating BCL_X_L and BID protein expression in breast and colorectal cancer cell lines****Abdulrahman Khazim Al-Asmari, Anverbatcha Riyasdeen and Mozaffarul Islam**

Prince Sultan Military Medical City, KSA

Scorpion venoms efficiently block the neurotransmitter signaling pathway by prejudicing the ion channel operating mechanism in the body system. This massive effect of ion channel impairment by the venom is due to the presence of various macromolecules such as proteins and peptides in it. Beside its negative effect, venoms also possess some of the beneficial aspect for the human being. The venom has also been shown to exhibit anti-cancer properties in various cancer types. This unique property of the venom as anti-cancer agent is mainly due to its role in creating apoptosis and also inhibiting several signaling cascade mechanism which promotes cancer cell proliferation and growth. In this study we examine the effect of venom (obtained from our local serpentarium facility) on the phenotypic changes as well as change at the molecular levels in colorectal and breast cancer cell lines. A dramatic decrease in cell invasion was observed in both the cancer cell lines upon venom treatment. We observed 60-90% decrease in this parameter which is an important hallmark of cancer progression. Additionally, a decrease in IL-6 as well as in RhoC expression indicates anti-cancer properties of the venoms used in this study. Additionally, decrease in the phosphorylation of Erk^{1/2} and STAT3 gives strong messages of its anti-cancer properties. In addition to this, decrease in the expression of pro-apoptotic proteins such as Bcl2 (Bcl-X_L) and BID and up-regulation of anti-apoptotic/tumor suppressor protein (p⁵³) by the colorectal and breast cancer cell lines when treated with venoms indicates its role as a pro-apoptotic agent. In addition to this, a vivid picture of DNA damage in comet assay was also observed in venom treated cell lines. Our study is in agreement with the previous work showing the anti-cancer property of scorpion venom. In conclusion, the scorpion venom obtained at our research center at Prince Sultan Military Medical City (PSMMC) possesses significant potential to act as an anti-cancer agent against colorectal and breast cancer cell lines.

Biography

Abdulrahman Khazim Al-Asmari is known for his scientific contributions in the field of toxinology. At present he is undertaking research projects to study the natural toxins such as the venoms of scorpion and snakes and their different fractions for treating different diseases including cancer. He is the author and coauthor of more than 50 publications which were published in reputed international and national journals. He is also the author of several books and book chapters published by International publishers of repute. He is a member of the Editorial Board of many journals of prestigious national and international scientific societies and committees.

abdulrahman.alasmari@gmail.com

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