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Cytotoxic effects of *Pseud ocerastes persicus* venom and its HPLC fractions on lung cancer cells

Benya mi n Shah bazi1. Zahra Salehi Na jafabadi'-' , Hamid reza Goudarzi ', Mahnaz Sajadi [3], Fatemeh Tahoori [2], Masou meh Bagheri '

' Payame Noor Universi ty of Tehran Shargh, Tehran, I ran
Razi Vaccine a nd Seru m Resea rch I nstitute, Agricul tural Research, Ed ucation and Extension Organization, i:araj, I ran
' Tofigh Daru Researc h, and Fngineering Company, Tehran, I ran.

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ABSTRACT

Background: Several studies have pointed out that cer tain snake venoms contain compounds presenting cytotoxic activities that selectively interfere with cancer cell metabolism. In this study, *Pseudocerastes persicus* venom and its fractions were investigated for their antica ncer potential on lu ng cancer cells.

Methods: Lung cancer cells (A549) and normal fibroblast cells (Hu02) were treated with the *P. persicus* venom and i ts HPLC fractions and the cell cytotoxic effects were analyzed using MTT and lactate dehydrogenasc release assays. Apoptosis was determined in venom-treated cell cultures usi ng caspase-3 and caspase-9 assay kits.

Results: The treat ment of cells with HPLC fraction 21 (25-35 kDa) of *P. persicus* venom resulted i n high LOH release in normal fibroblast cells and high caspase-3 and caspase-9 ac tivities in lung cancer cells. These resul ts indicate that fraction 21 induces apoptosis in cancer cells, whereas necrosis is predominantly caused by cell death i n the normal cells. fraclion 21 al Lhe final concenlralion of 10 µg/mL killed appruximalely 60% oflung cancer cells, while in normal fibroblast cells very low cell cytotoxic effect was observed.

Conclusion: HPLC fraction 21 at low concent rations displayed promising anticancer properties with apoptosis induction in the lung cancer cells. This frac tion may, therefore, be considered a promising candidate for further studies.

* Correspondence: zahra salehi@live com
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