Nanotechnology in snake venom research—an overview

Antony Gomes*[1], Sourav Ghosh[1], Jayeeta Sengupta[2], Kalyani Saha[1] & Aparna Gomes[3]

[1]Laboratory of Toxinology & Experimental Pharmacodynamics, Department of Physiology, University of Calcutta, 92, APC Road, Kolkata-700 009, West Bengal, India

[2]Department of Chemical and Materials Engineering, University of Alberta, Edmonton, Canada, T6G 1H9

[3]CSIR-Indian Institute of Chemical Biology (IICB), Kolkata-700 032, West Bengal, India

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Nanotechnology has revolutionized the paradigm of today's upcoming biological sciences through its applications in the field of biomedical research. One such promising aspect is by interfacing this modern technology with snake venom research. Snake venom is a valuable resource of bioactive molecules, which has shown efficient and promising contributions in biomedical research. The potentiality of merging these two unique fields lies in the approach of interfacing active bioactive molecules derived from snake venoms, which would yield better therapeutic molecules for future applications in terms of drug delivery, enhanced stability, reduced toxicity, bioavailability and targeted drug delivery. Available literature on nanoconjugation of snake venom bioactive molecules have suggest that these molecules have better therapeutic advantage in several fields of biomedical research *viz*., arthritis, cancer, etc. Another perspective in snake venom research could be green synthesis or herbal based synthesis of nanoparticles, which has shown enhanced effect in snake venom neutralizing capacity. Therefore, in terms of snake venom therapeutic potential and development of snake venom antidote, nanotechnology is a prodigious tool to be taken into serious consideration by the researchers. In this review, a comprehensive overview has been given on bridging nanoparticles with active biomolecules derived from snake venoms/herbs, current scientific evidences and records in this field, present trends and developments in nanotechnology in venom research along with future prospects in this arena. This may open new domains in snake venom research using nanotechnology in the near future.

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