Abstract

Snake bite is a common health hazard among rural population of developing countries, particularly affecting agricultural practitioners. In India, snakes responsible for majority of the bites belong to ‘BIG FOUR’ family. Further, polyvalent ASV is the only available treatment for snake bite in India. Proper management of snake bitten victims is necessary for the prognosis of the diseased state. Primary in snake bite management is to find out the snake responsible for bite, for which, one way of identification is to bring the snake dead or alive or assessing clinical parameters such as hemotoxicity or neurotoxicity. Observing the scales and patterns of the snake on its body may not always lead to exact identification of the species since evidences showing similar body patterns between two different species exists. Based on clinical parameters also it is not easy to detect the species responsible for bite, because in some cases both vipers and elapid venoms shows neurotoxicity as well as hemotoxicity. Further, identification of the species responsible for bite through the use of species specific diagnostic kits is the better choice. Australia is the country where the mortality due to snake bite is efficiently managed through the use of species specific diagnostic kits. Hence, the present study based on the epidemiological data obtained, selected Naja naja venom to develop species specific diagnostic kit. Further, purification of antigen from Naja naja venom was carried out using cation exchange and anion exchange chromatography. Initially fractionation of Naja naja whole venom on cation exchanger yielded eleven well separated peaks. Further, fractionation of first peak obtained from cation exchanger using anion exchanger resulted into four peaks. The fourth peak obtained was a PLA$_2$ and acidic and pure to homogeneity. Further, this protein was screened for toxicity and platelet aggregation. Finally, this protein was used to raise antibodies against it in rabbit to develop species specific diagnostic kit. Due to small molecular size, this protein failed to mount antigenicity, and hence it is always advisable to use high molecular weight proteins to develop antibodies.