Aim and Scope

Despite of many fairy tale stories and myths about snakes, these creatures are considered as dangerous to human beings. Snake bite is a common health hazard in rural areas of developing countries, mostly affecting agricultural workers. According to weakly sketched statistics and inaccurate epidemiology available, WHO has considered snake bite as neglected tropical disease. Snake venom can be classified as hemotoxic and neurotoxic. Neurotoxicity is the characteristic of elapid bite and that of viperid bite is hemotoxicity. Apart from this, assessing the clinical parameters such as fibrinogen levels, prothrombin time, fibrin degradation products, partial thromboplastin time would be of help in managing snake bitten victims. Even after following the afore said protocols, the prognosis of diseased condition will be poor. This is because; the only available treatment for snake bite is polyvalent ASV, which mounts secondary complications such as hypersensitivity. Management of ASV induced secondary complication itself is a risk and may lead to poor prognosis of the primary disorder. To overcome this, administration of species specific monovalent anti snake venom is the only right choice. Monovalent anti snake venom administration to snake bitten victims is possible only upon accurate identification of the snake species which is responsible for bite. Further, accurate identification of snake species responsible for bite is possible through the use of species specific diagnostic kits. Australia is so far the only country which is using species specific diagnostic kit to identify the snake species responsible for bite and thus administration of monovalent anti snake venom is possible there. For this reason, Australia has brought down the mortality rates due to snake bite to almost nil. In India, the snakes responsible for majority of the bites are ‘BIG FOUR’. The work in this thesis is focused on developing species specific diagnostic kit for the better management of
snake bite. Hence in the present thesis, chapter one aimed at complete review about venomous snakes and available management procedures for snake bite. Further, proper epidemiological data to select the snake species to develop diagnostic kit is of need. For this reason, chapter two aimed at complete epidemiological study of snake bite at Victoria hospital, Bangalore. Based on the result obtained from the epidemiological study, chapter three aimed at purifying a non toxic antigen from *Naja naja* venom. To develop species specific diagnostic kit, raising antibody against a purified antigen of that venom is a need. Hence, Chapter four aimed at raising antibody against purified non toxic antigen (NND-IV PLA$_2$) from *Naja naja* venom.