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Title: Attempt at selecting a single domain antibody against a pro-inflammatory cytokine TNF-α and Cobra venom

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Abstract:

Single domain antibodies (sdAb) or Variable domain of heavy chain (VHH) of heavy chain only antibodies (HCAb) from camelid species can prove to be a better alternative as a therapeutic or neutralizing agent. It has various advantages over conventional antibodies, such as small size, greater stability over wide ranges of pH and temperature, and the ability to recognise even cryptic epitopes, otherwise unrecognisable by conventional antibodies. Snake envenoming is a common health hazard in many parts of the world. So, it becomes imperative that we find better anti-venom strategies with minimum or no side effects. The current anti-venom strategies have many disadvantages and pose grave side effects like anaphylaxis and serum sickness to its recipients. A sdAb selected against cobra venom was cloned and transformed into an expression vector for protein expression and purification. Additionally, an attempt was made to select a single domain antibody against a pro-inflammatory cytokine, Tumor necrosis factor (TNF-a), which is known to be involved in various auto-immune disorders like rheumatic arthritis, psoriasis, psoriatic arthritis, non-infectious uveitis and inflammatory bowel disease (IBD).

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