20% of adult population in Bangkok may be at risk for acquiring JE when traveling to high risk/endemic area e.g. rural or upcountry.

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**Antibody response to various domain of protective antigen in cutaneous anthrax cases in India**

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**Background:** Anthrax, caused by *Bacillus anthracis* is a well known biothreat disease. Besides, cutaneous anthrax is a public health disease also several countries where agriculture is the major source of income. Being a zoonotic disease, it primarily infects herbivorous livestock and wildlife species and then spreads to human through contact with infected animals or contaminated animal products. The virulence of *B. anthracis* is attributed to two major factors, i.e. a tripartite toxin and the poly-g-D-glutamic acid capsule. The anthrax toxins are secreted as three distinct proteins, namely protective antigen (PA), lethal factor (LF) and edema factor (EF) and their activities have been well described. PA is the pivotal protein of the anthrax toxin complex and therefore, has been a major target for vaccine development.

**Methods & Materials:** PA is a 83 kD protein which has 4 different domains. In this study, the 3 different domains of PA were cloned and expressed. The recombinant proteins were used to develop ELISA to determine the anti-PA IgG for individual domain in human cutaneous anthrax serum samples. End-point titers were defined as the highest serum dilutions that yielded an OD450nm value 2-fold the value for the corresponding dilution of the control serum.

**Results:** Full PA protein (83 kD) and different domain proteins (PAD1, 46 kD; PAD2, 43 kD and PAD4, 33 kD) were purified to the homogeneity. A total of 41 cutaneous anthrax serum samples were examined for immuno-reactivity with PA protein and its domains. The whole PA protein was found to give maximum immunoreactivity followed by domain 4, 2 and 1.

**Conclusion:** The immunoreactivity of human cutaneous serum samples with individual PA domains showed that besides full PA protein, individual domain 4 and 2 can also be good targets for vaccine development as well as for serodiagnostic assays.

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