antigen (PGA) with nanoparticlelessandwich ELISA, compared to the traditional sandwich ELISA

**Results:** Sandwich ELISA achieved sensitivity of 93%, specificity of 92.5%, positive predictive value (PPV) of 95.7% and negative predictive value (NPV) of 88%, while nano-sandwich ELISA achieved sensitivity, specificity, PPV and NPV of 95.8%, 95%, 97.2% and 92.6%, respectively.

**Conclusion:** In conclusion, our research study provides that nano-sandwich ELISA is a well-established reference test for diagnosis of giardiasis.

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**Development of a rapid point of care immuno-filtration assay for serodiagnosis of cutaneous anthrax in India**

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**Background:** Anthrax, caused by *Bacillus anthracis* is known to occur globally since antiquity. In human, the disease manifests itself in one of three forms: cutaneous, gastrointestinal or pulmonary depending upon the route of spore entry. Cutaneous anthrax is a disease of public health importance also in country like India. Therefore, there is a need to develop an improved, simple, sensitive, specific, user-friendly, field usable, cost-effective and universal detection method for serodiagnosis of anthrax in human and animals.

**Methods & Materials:** Protective antigen (PA) and lethal factor (LF) genes were cloned and expressed in *E. coli*. The recombinant proteins were purified to homogeneity. A flow through system with nitrocellulose membrane was optimized by coating 1 µg of each protein and 1 µg of rabbit IgG as a control. A 30 µl serum sample was added on to membrane followed by addition of protein A conjugated colloidal gold. The appearance of color on spots was observed for the results.

**Results:** The detection sensitivity of the assay was found to be 10 µg/ml anti-toxin IgG. The test system was evaluated using anthrax infected sera (n=150) collected from patients presenting typical clinical symptoms of anthrax from anthrax endemic area in India. Sera from apparently healthy human (n=250), vaccinated individuals (n=5) and non-anthrax infected persons (n=30) were also tested. Flow through system was found to be 100% sensitive and specific as compared to 93.65 and 98.44% sensitivity and specificity in ELISA.

**Conclusion:** The system is very rapid and takes only 2 min. The system is extremely useful for point of care diagnostic assay for clinical samples. This can be used for surveillance of anthrax infection in human as well as animals also.

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