Indirect ELISA assay for population survey of bluetongue

- **Problem Description:**

Currently for the detection of antibodies to bluetongue virus, VP7 based ELISAs are in vogue world over. Such tests are useful for large scale surveys to assess the disease prevalence status. Unfortunately, VP7 based tests are not helpful for differentiating vaccinated from the infected animals. Use of non-structural protein (NSP) as an antigen can help circumventing this problem as antibodies to these proteins are generated upon infection in animals, however, those animals vaccinated with marker vaccine do not produce antibodies to these proteins. Keeping this in mind afusion protein having parts of NSP1 & NSP3 was expressed using recombinant technology and used as antigen in an indirect ELISA for the population survey of bluetongue.:

- **Solution Description:**

When an animal is infected by bluetongue virus, antibodies to both structural proteins (VP1-7) and NSPs are produced. However, unlike VP7, which is one of the components of virus outer shell, the NSPs are not packed in to the virus shell/core. Therefore, when an animal is immunized through a vaccine (marker vaccine) that is devoid of NSPs by ultrafiltration technique, there is no scope for production of antibodies to these proteins. This aspect of viral infection is exploited in the said technique to develop an assay that should be able to differentiate infected from vaccinated animals. The technology is protected by Patent (No. 419435)

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