# COUNTER-IMMUNOELECTROPHORESIS - A RAPID TECHNIQUE FOR THE DIAGNOSIS OF PESTE-DES-PETITS RUMINANTS

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## INTRODUCTION

Stomatitis-pneumoenteritis complex, locally called as "Kata" in goats, is caused by peste-des-petits ruminants (PPR) virus, a morbilivirus. In the recent years, the disease has been reported in Punjab on the basis of clinical signs and necropsy findings (Pervez *et al.*, 1993; Athar *et al.*, 1995; Ayaz *et al.*, 1997). This communication reports the use of counter-immuno-electrophoresis to detect antibodies against PPR.

## MATERIALS AND METHODS

Serum samples from three goats which survived out of eight having clinical history of fever, catarrhal nasal and oral discharge, respiratory distress and diarrhoea were taken. The post-mortem examination revealed oral erosions, congestion of abomasum and caecum, Zebra striping of ileum and colon, enteritis and pneumonia.

Counter-immunoelectrophoresis (Foreman *et al.*, 1983; Obi and Patrick, 1984): Four ml of 1% agrose in barbiturate buffer (pH 8.6) was poured on a clean glass slide. After solidification, wells were made 3 mm in diameter and 5 mm apart in the center of the slide. The agrose buffered gel on both sides was connected by paper wicks to buffer filled reservoirs and electric circut was completed by placiang anodal and cathodal wires in the reservoirs. The anodal and cathodal wells were filled with 10 $\mu$l of test serum and the known antigen, respectively. The homologous PPR and heterologous rinderpest antigens were used. A constant current of 10 mA was applied for 25 minutes. The results were read by examining the slide in oblique light against a dark background. A visible precipitating line was taken as positive result.

## RESULTS AND DISCUSSION

Counter-immunoelectrophoresis is a time saving procedure in which the reactants move towards each other. At pH 8.6, the antibody molecules carry a slight positive charge that will cause their movement toward the cathode. On the other hand, viral antigens having an acidic isoelectric point will bear a negative ionic charge at alkaline pH and will be displaced toward the anode and thus accelerate the precipitation (Barrett, 1988).

All the three serum samples gave a strong precipitation lines with homologous PPR as well as heterologous rinderpest antigens.

Immunologically PPR virus are related to rinderpest virus as evidenced by cross protection, cross precipitation in gels and fluorescent antibody tests (Hamdy *et al.*, 1975). Boer *et al.* (1975) reported fairly close relationship between PPR, rinderpest, measles and canine distemper viruses by using complement fixation and virus neutralization tests. According to Diaelo *et al.* (1994) comparisons of the nucleic acid, PPR virus is slightly more related to canine distemper virus than are measles and rinderpest viruses. The difference lies in the nucleocapsid proteins of rinderpest and PPR viruses (Diaelo *et al.*, 1989).

Counter-immunoelectrophoresis is more sensitive than gel precipitation (Obi and Patrick, 1984) and does not require any elaborate equipment. For these reasons, the test is recommended for screening large number of serum samples where laboratory facilities and financial support are frequent limitations.

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