We are delighted that the International Pig Veterinary Society Congress 2004, decided to select South Africa as the host country for the 20th IPVS Congress. The Pig Veterinarians of South Africa will ensure that this congress lives up to the best traditions of previous congresses; incorporating an interesting and topical scientific programme, fascinating accompanying persons tours and an excellent social programme, allowing delegates the opportunity to network with their overseas colleagues.

This, the first IPVS congress on the African continent, will undoubtedly be of enormous benefit in generating solutions to the emerging pig veterinary challenges, especially those related to exotic and changing viral diseases, decreased use of antimicrobials and nutritional advances. The congress is important to further pig veterinary science in South Africa, to encourage younger veterinarians to join the pig industry, as a vehicle to generate funds for research and to improve the pig industry in Southern Africa.

South Africa is a magnificent and beautiful country, and offers tourists value for money. Thus, pre and post congress tours will be a major attraction for delegates to come to South Africa. Durban, in KwaZulu Natal, is a vibrant multi-cultured city with magnificent beaches, easily accessible game parks, theme villages and a moderate winter climate making it an ideal tourist destination. We urge our colleagues throughout the world to use this opportunity to get a glimpse of the continent’s rich and fascinating wonders and to enjoy the hospitality of their African friends.

Dr Peter Evans
Chairman: Local Organising Committee: IPVS 2008
**USE OF AN INTERNAL CONTROL IN A QUANTITATIVE RT-PCR ASSAY FOR QUANTITATION OF PORCINE EPIDEMIC DIARRHEA VIRUS SHEDDING IN PIGS**

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**Introduction**

Porcine epidemic diarrhea virus (PEDV), a member of the family Coronaviridae, causes severe enteropathogenic diarrhea in swine. PEDV and transmissible gastroenteritis virus (TGEV) which are serologically unrelated, have both been identified as causative agents in digestive tract infections. Clinically, these two viral infections can hardly be differentiated and they incur heavy economic losses in Asia and Europe. PEDV is transmitted by feces from infected pigs and the natural infection starts after oral uptake (1). Before local immunity is established actively, the piglet intestine is protected against infection by maternal antibodies. Serological examination facilitates the earlier assessment of sows with this virus, but even piglets from seropositive sows are not protected against infection if the milk antibody level is non-protective. Therefore, virus detection is the best means of assessing the current epizootic situation in a swine herd (2). In this study, pigs were inoculated with a virulent field PEDV strain and a cell attenuated PEDV DR13 strain. Virus shedding was monitored every day after inoculation and was quantitated by RT-PCR using a DNA plasmid as an internal control (IC). Therefore, the objectives of this study were to establish quantitative RT-PCR for PEDV, and to measure the shedding viral load of PEDV after oral inoculation.

**Materials and Methods**

Primer P1 is a conventional PCR primer of 20 nucleotides in length that corresponds to the opposite strand of target cDNA. The second primer, Pint (pint1+P2) is 40 nucleotides in length. This comprises 20 nucleotides at the 3’ end corresponding to the predetermined target cDNA sequence distant from P1, and 20 nucleotides at the 5’ end P2 corresponding to the target cDNA sequence nucleotides that are upstream from the segment Pint. Amplification of cDNA with these primers results in a 433bp PCR product that has P1 and P2 priming sites. For the construction of plasmids with IC DNA, a PCR product of 433 bp was extracted from the gel and subsequently cloned into the pGEM-T easy vector (Promega, Madison, WI). PEDV was extracted from the gel and subsequently cloned into the plasmids with IC DNA, a PCR product of 433 bp was diluted and tested by RT-PCR amplification. The same rate. This study focused on the identification of PEDV shedding and the establishment of a PCR-based assay for its quantitation. The quantitative RT-PCR assay employed internal control DNA, optimized RT-PCR conditions, and a standard curve may be useful in studying the molecular epidemiology of PED outbreak.

**Results**

PEDV cDNA from a 10^3 dilution of 10^{6.0} TCID_50/0.1ml was quantitated with two-fold serially diluted IC DNA using a quantitative RT-PCR (Fig. 1). Logarithmically transformed data were analyzed by a least square regression method and an equimolar point was obtained from the regression equation where the log density ratio is the ‘0’ value on the plot. From the equimolar point, the 10^3 dilution of 10^6 TCID_50/0.1ml of PEDV DR13 was converted into 10^{4.65} IC DNA copies. In 14-day-old piglets, the PEDV shedding peak was observed at 2 days postinoculation and then decreased until 8 days, however, there was no significant difference among the experimental groups. (Fig. 2) In sows, no significant difference was observed in the quantity of PEDV shedding during the shedding period.

**Discussion**

The initial aim of this study was to investigate PEDV shedding in pigs and to establish a simple method for measuring the level of PEDV shedding using quantitative RT-PCR. In this study, the quantitative PCR method competitively coamplifies reference templates that share their primer binding site with the target molecules. Accordingly, the two templates compete for the primers and a subsequent amplification reaction takes place at the same rate. This study focused on the identification of PEDV shedding and the establishment of a PCR-based assay for its quantitation. The quantitative RT-PCR assay that we validated employs internal control DNA, optimized RT-PCR conditions, and a standard curve may be useful in studying the molecular epidemiology of PED outbreak.

**References**