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-cultural 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
EXPRESSION OF ORF7 AND ORF5 GENES OF PORCINE REPRODUCTIVE AND RESPIRATORY SYNDROME VIRUS AND ESTABLISHED A NOVEL INDIRECT RNE-ELISA BASED ON THE FUSION PROTEIN

M Yue¹, DX Qiu¹, HC Chen¹
¹Department of Animal Infectious Disease, WUHAN, China

Introduction
Since porcine reproductive and respiratory syndrome (PRRS) was first recognized as “mystery swine disease” in the United States in 1987, it has become one of the most economically disease of swine worldwide [1]. Porcine reproductive and respiratory syndrome virus (PRRSV) encoded a replicase polyprotein and six structural proteins. The ORF5 gene encoding GP5 can elicit the major neutralizing antibodies (NAs) against PRRSV during phase of infection, about 95% of the whole NAs. GP5 is the main target antigen for vaccine design and diagnosis. Nucleocapsid protein was encoded by ORF7, also called N protein, can not elicit NAs. The antibodies to N protein can be detected in 3 weeks after experimental infection, so it is an ideal target for early diagnosis [2-4]. In this study, we combine the merits of the GP5 and N protein for both early detection and NAs detection for resistance to PRRSV.

Materials and Methods
Materials: Standard 63 negative sera and standard positive sera of ten epidemic porcine diseases: porcine reproductive and respiratory syndrome, japanese encephalitis, porcine parvovirus disease, hog cholera, chlamydia disease, pseudorabies, toxoplasmosis, atrophic rhinitis of swine, porcine bacterium burgeri were provided by Institute of Lanzhou Veterinary Medicine. And 327 field porcine sera samples were obtained from clinical samples of five province of HuaZhong district.

Methods: According to the nucleotide sequence of PRRSV, two pairs of primers were designed and used to amplified the ORF7 and ORF5 genes by RT-PCR, respectively. After cloned in the pMD-18T vector, both genes were orderly subcloned to the downstream of Glutathione-S-Transferase (GST) of pGEX-KG expression vector. After transformed into E. coli BL21 and induced by IPTG, the products of BL21 were analyzed. The fusion protein was purified and used as an antigen to establish a novel PRRSV ELISA diagnose assay, including optimization of ELISA working conditions, determination of cut-off value, reproducibility experiments, cross-reactivity assay, validation of rNE-ELISA and comparing with IDEXX-ELISA kit, The correlation between virus neutralization antibody of the infected pigs and antibody response to fusion protein was further studied.

Result
The ORF5 and ORF7 gene were cloned and sequenced the sequence. The results of SDS-PAGE and Western-blot indicated that the combined genes of ORF7 and ORF5, and GST was expressed in E.coli BL21 as a fusion protein GST-NE about 64kDa in molecular weight, and this fusion protein showed reactive activity immunologically. And rNE-ELISA shows good specific and sensitive basing on the procedure. The two methods showed agreement 93.6% by detecting 327 clinical serum samples, and no significant difference was found between the two methods (P>0.05). The regression function analysis suggested that there were positive correlation between rNE-ELISA and their specific neutralizing titers in the clinical samples.

Discussion
PRRS is the major obstacle of worldwide hog breeding now, so we need more ideal methods to control this headachy disease, both high efficient vaccine and novel diagnosis method are good choice for it. Fusion protein was used to develop a novel method to detect both for early diagnosis and the resistance of the population to PRRSV. Basing on this method, it is safe that no whole virus manipulation and we can manage the different infection herd with corresponding efficient measures, such as herd infection with high NAs, infection with low NAs, and no infection. This study lays a foundation for the development of a novel serodiagnostic method for PRRSV.

Reference