



**Thesis Title** Identification of Resistant Gene Against *Escherichia coli* Causing Diarrhea in Pre-weaned Pigs

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### ABSTRACT

Diarrhea due to *Escherichia coli* (*E. coli*) infection is an important problem in pig production especially, in pre-weaned period and also can be responsible for considerable high economic losses. The *E. coli* susceptible or resistant pigs were presented or absent specific receptor on brush border and associated with adhesion or non adhesion of bacteria to the receptors, respectively. The aim of this study was to identify differentially expressed gene in brush border between K88-*E. coli* resistant and susceptible pigs. Differential display reverse transcription polymerase chain reaction (DDRT-PCR) was performed with 12 combination primers (dT<sub>12</sub>VG anchored and arbitrary primers). The results showed a total of 512 cDNA fragments and had band size from 151 to 573 bp. Average cDNA fragment were 42.67 cDNA bands per a combination primer. Seven out of 12 specific bands were only expressed in susceptible phenotype where as, 5 out of 12 specific bands were only expressed in the resistant phenotype group. Five cDNA fragments were successfully sequenced. Two clones (ZP18B3 and ZP24B2) showed homology with Dipeptidyl-peptidase I precursor (*DPPI*) and S-Adenosylhomocysteine hydrolase (*AHCY*) gene, respectively. Three clones were identified as novel gene. These ESTs represent candidate genes for studying of resistant and susceptible to diarrhea in pre-weaned pigs.