

9<sup>th</sup> International Conference on

# GENOMICS & PHARMACOGENOMICS

June 15-16, 2017 London, UK

## Annotation and genetic variation study of swine CD (cluster of differentiation) genes

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CD (cluster of differentiation) markers are cell surface molecules on immune-related cells such as leucocytes, which have various physiological functions, especially immune responses. CD markers presently range from CD1 to CD371 in human. CD molecules are mostly cell surface proteins encoded by genes. In the case of swine CD genes, it remains less well known by comparison with human CD genes. We defined the structures of the swine CD genes by assembly of transcriptome sequencing data and comparing with multi-species CD genes. Transcriptomic data were produced by RNA sequencing in 15 tissues of pigs in NIAS and obtained from public database such as Ensembl and NCBI. All swine CD genes were annotated on the Korean native pig genome map constructed by *de novo* assembly. We classified the all annotated swine CD genes by comparing the genomic sequences and finding common motif conserved between them. After annotating swine CD genes, genomic variations were investigated using mapping with paired-end sequencing data of a total of 59 pigs of five breeds. In the study, furthermore, we predicted variant effects on the swine CD genes based on their protein structure-functional relationships. We hope to provide new insights and extend information for understanding of swine immune system based on the genomic variations of the swine CD genes.

### Biography

Haesu Ko has completed her Bachelor's degree in 2016 at Chonbuk National University, South Korea and presently, she is pursuing her Master's degree at the same university. She is a Junior Researcher of Animal Genomics & Bioinformatics Division, National Institute of Animal Science, South Korea.

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