

# Effect of Breast cancer metastasis-suppressor 1-like (BRMS1L) genotype on teat number traits in Jeju native pigs (JNP) and Landrace

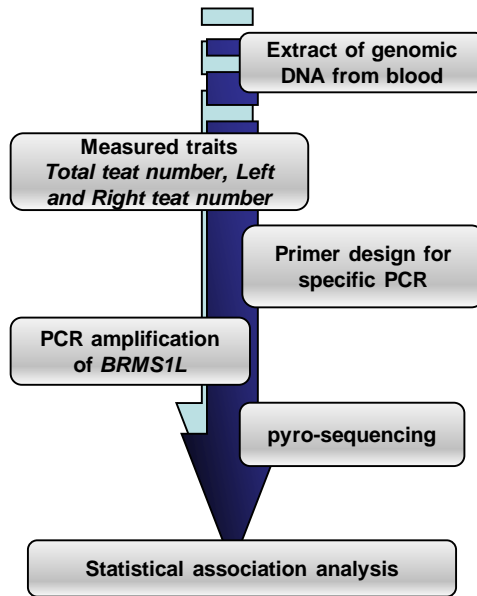
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## ABSTRACT

The purpose of this study is to compare the changes of teat number traits of Jeju native pig (JNP) and Landrace breed according to the breast cancer metastasis-suppressor 1-like (BRMS1L) genotype. The number of teat varies according to the single-base polymorphism with a G or A base 1,087 from the start codon ATG in the exon 1 region of the BRMS1L gene. The total teat number are examined at birth for 28 JNPs and 72 Landraces, and the BRMS1L genotypes are analyzed by Pyrosequencing. As a result, the genotyping frequency of JNP are 1 A / A type, 9 A / G type, and 18 G / G type, whereas, on the contrary, Landrace had 70 A / A type, 2 A / G type, and G / G are identified as 0 heads. The total teat number are between the two varieties are  $13.32 \pm 0.95$  and  $14.51 \pm 1.03$ , respectively ( $P < 0.001$ ). According to genotypes in Jeju native pig breeds, the total number of nipples are 15 A / A,  $14.0 \pm 0.82$  A / G, and  $12.89 \pm 0.74$  G / G ( $P < 0.018$ ). Conversely, Landrace is  $14.54 \pm 1.02$  A / A and  $13.5 \pm 0.5$  A / G. As a result of the above study, breed and the frequency of genotypes are found to have a significant effect on the difference in teat count. Based on the results of this study, if the improvement of Jeju native pigs are to be carried out, it is expected that the number of teat will increase and the mammalian capacity will increase.

## MATERIAL & METHODS



## RESULTS

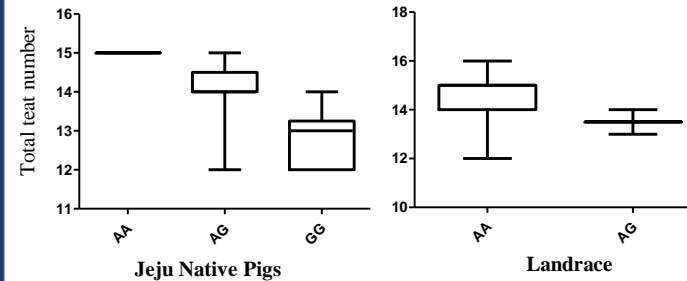


Fig. 1. Total number of teats according to BRMS1L genotype in Jeju native pig and landrace

Table 1. Total number of teats according to BRMS1L genotype in Jeju native pig and landrace

| Trait | Jeju native pig |            |            | Landrace   |          |    | Significance |       |             |
|-------|-----------------|------------|------------|------------|----------|----|--------------|-------|-------------|
|       | AA              | AG         | GG         | AA         | AG       | GG | breed        | teat  | interaction |
| TTN   | 15              | 14.00±0.82 | 12.89±0.74 | 14.54±1.02 | 13.5±0.5 | -  | <.001        | 0.002 | 0.972       |
| LTN   | 7               | 7.11±0.57  | 6.53±0.50  | 7.21±0.58  | 7        | -  | <.001        | 0.032 | 0.657       |
| RTN   | 8               | 6.89±0.57  | 6.47±0.49  | 7.33±0.63  | 6.5±0.5  | -  | <.001        | 0.002 | 0.716       |

## CONCLUSION

- There are two kinds of Korean native pigs: the indigenous pig raised on the Korean Peninsula and the Jeju native pig inhabited on Jeju Island. Owing to being raised on an island that has been isolated for more than 1,000 years, the Jeju native pig (hereafter, the Jeju native pig is referred to as KNP) has exclusive genetic properties that are different from those of the pigs raised on the Korea Peninsula (Cho et al., 2009).
- The number of teat is one of the traits that can evaluate the maternal ability of a mother pig and is used as a selection index in the pig industry.
- We confirmed that there is a variation in the teat number trait according to the specific base changes present in the BRMS1L gene. However, it is not clear because there are few samples. Based on the results of this study, it is necessary to conduct further research.