***Cite this as***: Yue-jin PU, Yan WU, Xiao-juan XU, Jin-ping DU, Yan-zhang GONG, 2016. Association of *VIPR-1* gene polymorphisms and haplotypes with *egg production in laying quails. Journal of Zhejiang University-Science B (Biomedicine & Biotechnology)*, 17(8).
http://dx.doi.org/10.1631/jzus.B1500199

# Association of *VIPR-1* gene polymorphisms and haplotypes with egg production in laying quails

Key words: Laying quail, Haplotypes, VIPR-1 gene, Egg production traits

JZUS-B

# *Research Summary*

This research mainly focused on the polymorphisms of vipr-1 gene in laying quails and obtain the following:

- two mutations (G373T, A313G) were detected in all tested 443 individual quails.
- the SNP genotypes of the VIPR-1 gene were significantly associated with the egg weight of G373T and A313G in H and L populations.
- Quails with the h1h2 (GGGT) diplotype always exhibited the smallest egg weight and largest egg number at 20 weeks of age.

JZUS-B

# *Innovation points*

- research of SNP of VIPR-1 gene in laying quail for the first time .
- found the two mutations (G373T, A313G) which come from vasoactive intestinal peptide receptor-1 (VIPR-1) of laying quail.
- associations with egg weight have found not only the SNP genotypes of the VIPR-1 gene but also diplotypes





# *Innovation points*

**A series of comprehensive tables and Figures were generated to summarize the study VIPR - 1 gene polymorphism of egg quail .**

Figure 1 | Sequences amplified by primer P1 and P2 containing the G373T(A) and A313G(B) mutations respectively.
Table 1 | Primers used for analysis of the VIPR-1 gene in quail

Table 2 | Distribution of genotypic and allelic frequencies in all populations
Table 3 | Association of SNP of VIPR-1 gene with egg production traits in the H and L lines
Table 4 | Linkage disequilibrium tests of G373T and A313G loci in the VIPR-1 gene
Table 5 and 6 | Association analysis between diplotypes and egg production traits in the H(L) line

JZUS-B