

# Session Search



## Association of the Runt-Related Transcription Factor 2 (RUNX2) Gene with Bone Integrity Traits in a Paternal Broiler Line #P642

**Date:** Monday, January 13  
10:00 am - 11:30 am

### Description:

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### P642 - Association of the Runt-Related Transcription Factor 2 (RUNX2) Gene with Bone Integrity Traits in a Paternal Broiler Line

The intense selection for rapid growth rate in broilers had favored the onset of locomotor problems and decreased bone strength of chickens. The Runt-related transcription factor 2 (*RUNX2*) gene is related to the development of bone tissue, acting as a transcription factor in the formation of osteoblast cells. Mutations on the *RUNX2* may result in diseases such as cleidocranial dysplasia. Association analyses between a SNP in the *RUNX2* gene and 6 femur integrity-related traits were performed in a paternal broiler line developed by Embrapa Swine and Poultry National Research Center, Brazil. The evaluated traits in the femur were: weight, length, thickness, breaking force, and dry matter and ash contents. A region of 1044 pb between intron 6 and exon 7 of *RUNX2* was amplified and genotyped for the g.773 A>G SNP with PCR-RFLP in 562 chickens. Data were analyzed using QxPak software with a mixed model including the fixed effects of sex, hatch and SNP, and the infinitesimal and residuals as random effects. Additive, dominant and additive + dominant effects of the SNP were tested including their interaction with sex. The *RUNX2* SNP was not associated ( $p < 0.05$ ) with any of the bone traits studied. Therefore, it is possible to conclude that the g.773 A>G SNP does not directly influence the traits related to femur integrity measured in this population of broilers.