

## Abstract #M90

**Section:** [Breeding and Genetics](#)

**Session:** [Breeding and Genetics: Molecular genetics](#)

**Format:** [Poster](#)

**Day/Time:** [Monday 7:30 AM–9:30 AM](#)

**Location:** [Gatlin Ballroom](#) 

# M90

### **Effect of the STAT5A *Bst*EII polymorphism on reproductive parameters of Holstein dairy cows.**

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The signal transducer and activator of transcription 5A (STAT5A) is a transcription factor that mediates the function of various hormones and cytokines, including growth hormone (GH). Mutations in the STAT5A gene, such as the substitution of a G by a C in exon 8, have been associated with differences in production and reproductive performance of dairy cows. The aim of this study was to evaluate the effect of STAT5A *Bst*EII polymorphism on the days from calving to first ovulation and calving-conception interval (CCI). For identification of the polymorphisms DNA was extracted from blood and a fragment of the STAT5A gene was amplified by PCR. The presence of the G and C alleles was determined after digestion of the PCR products with the *Bst*EII enzyme and gel electrophoresis. For this study 73 Holstein cows were followed from 21 d prepartum to 210 d in milk (DIM). At 55 DIM the cows were submitted to an OvSynch-TAI protocol, which was repeated in cows diagnosed as not pregnant. From calving, milk production was recorded, milk samples for progesterone measurement were collected twice a week to determine ovulation day until 60 DIM, and the CCI was evaluated until 210 DIM. Serum samples for insulin-like growth factor I (IGF-I) measurement were collected at -21, 0, 7, 21 and 60 DIM. Data were analyzed using the GLM procedure of SAS. In total, 19 cows (26%) were of the CC genotype, 32 cows (43.8%) of the GC genotype and 22 cows (30.2%) of the GG genotype. The calving to ovulation interval was not different between genotypes ( $P > 0.05$ ):  $28.4 \pm 3.1$ ,  $29.5 \pm 2.5$  and  $29.4 \pm 2.9$  DIM for the CC, CG and GG genotypes. The CCI was  $101.3 \pm 9.4$ ,  $102.7 \pm 7.6$  and  $93.9 \pm 9.4$  DIM for the CC, CG and GG genotypes ( $P > 0.05$ ). Milk production was similar between the 3 genotypes ( $P > 0.05$ ). Serum IGF-I was also not different between genotypes, being  $66.3 \pm 7.2$ ,  $61.8 \pm 5.8$ ,  $65.6 \pm 6.7$  ng/mL for CC, CG and GG genotypes ( $P > 0.05$ ). Therefore, the STAT5A *Bst*EII polymorphism did not affect the calving to ovulation interval, CCI, milk production or IGF-I concentrations in Holstein dairy cows. It should be noticed that this study used a small number of cows and larger studies are necessary to confirm current results.

**Key Words:** SNP, growth hormone (GH), insulin-like growth factor I (IGF-I)