

# Benjamin Beaton, Animal Science- Bioscience and Biotechnology

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## **Identification of H19 polymorphism for an assessment of biallelic expression**

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Animals produced from assisted reproductive technologies suffer from developmental abnormalities and early fetal death at a higher frequency than that observed in those produced by natural breeding. These symptoms are reminiscent of imprinting disruptions, suggesting the possibility of an alteration in the expression of imprinted genes such as biallelic expression or silencing. H19 is one of the imprinted genes first identified in mice and humans, but its imprinting status has not been determined in pigs. The objective of this study was to identify an H19 polymorphism and estimate its frequency in the commercial pig population. In this study a polymorphism in the H19 gene was identified. The PCR products contained a pooled genome with over 900 specimens to support this finding. From the positive PCR products, the DNA was cloned and transformed with a TOPO TA Cloning kit (Invitrogen). Positive colonies were identified and digested with an AclI enzyme, which cut the DNA in specific fragments that were identifiable in a gel. Analysis of the gel showed evidence that a polymorphism exists on the H19 gene.