Detection of Lethality Gene for Improved Fertility in Mammals

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing a single nucleotide polymorphism (SNP) in the STAT5 gene, which is associated with early embryo death in dairy cattle.

OVERVIEW

Embryonic death is a common occurrence in farm animals, and it is likely that genetics plays a role in lethality. When two animals that carry a lethal allele breed, there is a 25 percent chance of producing an embryo that carries both alleles and therefore does not survive. Farmers selecting for cattle with high milk yield or better milk quality may inadvertently choose cattle with lower fertility because the lethal allele is more common in dairy cattle selected for improved milk production traits.

THE INVENTION

A UW-Madison researcher has developed methods for detecting a lethality allele and improving fertility in an animal. He identified a single nucleotide polymorphism (SNP) in the STAT5 gene, which is associated with early embryo death in dairy cattle. Animals with one copy of the lethal allele are at risk for producing offspring with the homozygous recessive trait for lethality. Using the methods described in this invention to identify and selectively breed individuals that do not carry this allele would increase fertility and improve milk production in dairy cattle.

APPLICATIONS

• Dairy cattle breeding to improve fertility and milk production traits

KEY BENEFITS

• Increases fertility and reproductive performance of animals
• Could eventually lead to eradication of lethal genes
• Improves milk composition traits in dairy cattle
ADDITIONAL INFORMATION

Publications

Tech Fields
Agriculture - Animal biotech

CONTACT INFORMATION

For current licensing status, please contact Emily Bauer at emily@warf.org or (608) 262-8638.