



Trotter or Pacer? Accurate Method to Detect Preferred Gait in Standardbred Horses

A genetic testing method to accurately (>99%) predict gait profile of Standardbred horses around the globe.

IP Status: Pending US Patent; **Application #:** 17/048,434

Trotter or Pacer Stallion? Genetic test can predict

Prof. McCue at the University of Minnesota has developed a method to accurately predict gait profiles (pacer vs. trotter) in Standardbred horses using genetic testing. This test examines a specific set of single nucleotide polymorphisms (SNPs), and uses a conditional inference tree algorithm to predict the gait profile of a horse with **over 99% accuracy**.

The results of this test will help owners, trainers and breeders to:

- identify preferred natural gait of their horses: pacer or trotter
- plan and train their horses for suitable races
- fine-tune breeding programs with designed matings

While mutation in DMRT3 gene can be used as a necessary indicator for “gaitedness”, it is fixed in Standardbreds and is not useful to predict the preferred gait profile. It is worth noting that nearly 20% of the offspring of Standardbred trotter stallions go on to race as pacers (Cothran et al., Anim Genet. 1987).

Phase of Development

Pilot scale demonstration in an independent population (99.4% accuracy)

Features & Benefits

- Early prediction of preferred gait profile helps owners/trainers choose and plan for suitable races
- Accurate prediction (over 99%) using a set of genetic indicators
- No need to rely on ancestry, or physiological proxies such as back lengths/loin strength to predict the gait of the horse
- Reliable, early determination saves time, money, and other resources
- Breeders can develop effective breeding programs

Applications

- Horse training
- Horse racing
- Diagnostic tool for equine traits
- Diagnostic tool for selective horse breeding

Researchers

Technology ID

20180249

Category

Software & IT/Algorithms

Agriculture &

Veterinary/Veterinary Medicine

Learn more



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Publications

[*Identification and validation of genetic variants predictive of gait in standardbred horses*](#)
PLoS Genet. , 2019 May; 15(5): e1008146.

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