

Transgene detection in equine sports

Evidential testing to detect the addition of genetic material into the cell by gene transfer

LGC

Introduction

LGC provides a new innovative transgene detection service to both new and existing customers. This service is the result of a 5-year research programme at LGC, led by internationally recognised molecular biology expert Dr Edward Ryder and supported by the British Horseracing Authority (BHA), the regulatory authority for horseracing in Great Britain. It reflects LGC's commitment to expanding our knowledge and analytical capabilities to stay ahead of any new integrity and welfare threats in animal sports.

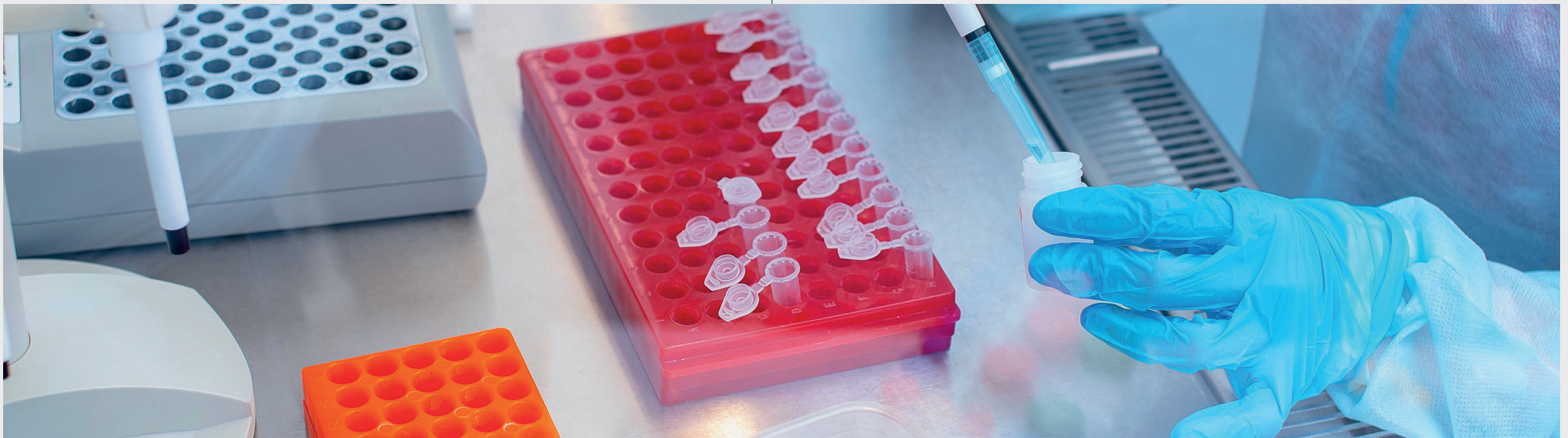
This service is the result of a **5-year research programme at LGC.**

Why test?

Gene doping, as defined by the World Anti-Doping Agency (WADA), involves the use of cells, genes, or genetic techniques—outside of medical treatment—to enhance athletic performance. There are two primary approaches:

1. Gene transfer using non-integrating transgenes, which affects only the treated individual.
2. Gene editing, which directly alters the organism's DNA and can impact both the individual and their future offspring.

Gene doping is widely recognised across international jurisdictions as an emerging risk to racehorse welfare, and the fairness of competition. Scientific and technological advancements mean that genetic manipulation poses a very real risk to horseracing and the essence of the thoroughbred breed.



A platinum-level testing service as standard

LGC's transgene screening methodology utilises the polymerase chain reaction (PCR) and Next Generation Sequencing (NGS) to detect the administration of exogenous transgenes and vector features in equine blood samples. The screening methodology is designed to continuously expand, with current capability for over 30 performance-related transgenes, and our ISO 17025-accredited confirmatory method provides absolute assurance of the validity of a positive result.

Transgene detection programmes can be designed to support individual requirements, but are typically based upon event day and/or out-of-competition testing with intelligence-led and random sampling, acting as a deterrent against the use of transgenes and genetic manipulation techniques.

LGC can also provide tamper evident collection kits which are designed to maintain sample integrity and support the chain of custody record.

Why LGC?

We are a global leader in life science tools, partnering with customers to find solutions that diagnose, treat, feed and protect our growing population. Working collaboratively with our partners in the scientific community, our products and services help to solve some of the most complex challenges facing society. LGC, headquartered in the UK, boasts a heritage of over 180 years. The Fordham laboratory has been operational since 1963 and is internationally recognised for its expertise in equine drug surveillance. Today, with a team of more than 100

highly skilled scientists, this laboratory leads the field in equine sports testing, human drug testing and nutritional supplement testing. We employ industry-leading experts who are driving innovation and compliance across all areas. Our work is pivotal in ensuring that integrity, fairness and safety is maintained.

We are proud to combine our scientific expertise with our passion for protecting the welfare of animals and the integrity of sport, which culminate in truly delivering 'Science for a Safer World'.





Get in touch

To discuss your testing requirements, or learn more about pricing and logistics, please contact LGC (Fordham):

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