

## **Project Review**

### **“A Pilot Study to Develop a Reliable Blood Test for the Detection of Gene Doping after Intramuscular Injection of Naked Plasmid DNA”**

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With the development of potent gene transfer technology, the availability for illegal gene doping is becoming more likely. To stay ahead of this eventuality, we strive to empower WADA/IOC with the diagnostic capability to detect genetically modified athletes (GMA). We will conduct a pilot study to determine the feasibility of detecting plasmid gene transfer vector sequences and cDNA sequences that may be used for illegal performance-enhancing gene doping from blood samples.

Using appropriate reporting systems with naked plasmid DNA, we will determine if the DNA sequences can be detected in blood cells using PCR-based DNA analysis. Eventually, this work may lead to the development, validation, and manufacture of a kit for routine use by WADA/IOC to screen athletes for illicit gene doping-based performance enhancements.