

Project Review

“Educational external quality assessment scheme (EQAS) for the implementation of the finalized version of the isoform assays to detect GH doping in sports in WADA-accredited laboratories”

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Research in recent years demonstrated that the analysis of changes in the hGH isoform pattern occurring after administration of recombinant hGH can be used to detect hGH doping. Two pairs of immunoassays based on monoclonal antibodies have been developed, which can be used as two independent tests to measure the relative abundance of the monomeric 22 kD isoform over all other isoforms in a serum sample. Details of the method have been published (Wu et al., 1999; Bidlingmaier et al. 2000, 2001, 2003, 2007).

The original assay format, which was based on research reagents prepared inhouse and on time-resolved fluorescence as the detection label has meanwhile been developed further (Bidlingmaier 2009) to a high quality, chemiluminescence assay kit format. These kits are commercially available to WADA accredited laboratories. Based on those kits, the differential immunoassay approach has been implemented in several WADA accredited anti-doping laboratories. Implementation and validation of the kits in the respective laboratories was followed by two rounds of educational proficiency testings (PT) or “external quality assessment schemes” (EQAS), which have been conducted in June 2008 and in November 2008. The EQAS rounds were intended as a measure to externally control the correct implementation of the method in the respective laboratories. The results of these PT rounds confirmed that the method overall was implemented satisfactorily, and allows reliable analysis of GH in serum samples with homogenous results among laboratories.

Here, we propose to conduct a third educational EQAS to allow the remaining WADA accredited laboratories to complete implementation of the test. In addition, the EQAS could be used by laboratories which identified problems during the last EQAS to demonstrate that corrective actions have been successfully implemented.