



ANTI-DOPING RESEARCH

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**RESEARCH STUDY SHOWS THAT EXISTING TECHNOLOGY
DOES NOT RECOVER ENOUGH HUMAN GROWTH HORMONE FOR
VIABLE URINE TEST, SUGGESTS NOVEL RECOVERY METHODS
WILL BE KEY TO SUCCESS IN URINE**

(Los Angeles, April 12, 2010) – In the ongoing search for a way to test urine for human growth hormone, Anti-Doping Research, one of the world’s leading scientific organizations battling performance-enhancing drugs in sports, has established that current methods do not recover sufficient hGH from urine to apply the ratio test, which is the approved test in serum. With this information known, the testing community can now concentrate on developing novel recovery techniques that have the potential to recover additional hGH from urine allowing for subsequent analysis.

The announcement comes in a peer-reviewed article published in the Sept. – Oct. 2009 issue of the scientific journal *Drug Testing and Analysis*.

“This development is an important step in establishing effective detection for human growth hormone based on a urine test,” says Don Catlin, M.D., founder and chief executive of ADR and a coauthor of the report. “In addition to showing that current methods and technologies do not recover enough hGH, it also suggests that sufficient recoveries should be possible with a new and improved method.”

The International Olympic Committee first added hGH to its list of banned substances in 1990. Ever since scientists have been trying to develop a urine test. The World Anti-Doping Agency approved use of the ratio test on serum prior to the 2004 Summer Olympic Games in Athens. It was introduced there and has been used at all subsequent Olympics. No positive cases have been reported at any Olympics, but one positive case was recently reported elsewhere.

According to media reports and investigations by police and sports leagues, use of hGH among competitors is widespread. In Dec. 2007, Major League Baseball’s commissioned Mitchell Report underscored the problem in professional baseball. “Many players,” it reported, “have shifted to human growth hormone, which is not detectable in any currently available urine test.”

ADR began work to develop a urine test for hGH years ago when Major League Baseball and the National Football League/NFL Players Association Research and Education Foundation asked them if it might be possible to develop such a test and pledged funds to support the research. At present, unlike Olympic athletes, most professional competitors in the United States do not undergo blood testing for performance-enhancing drugs.

In a series of experiments, ADR first sought to enrich urine samples with hGH, then recover the hGH by immunoprecipitation methods, and finally detect hGH using the western blot method and mass spectrometry. “As the project developed,” the report states, “it became apparent that the enrichment and immunoassay techniques would not be adequate to recover sufficient hGH from urine for subsequent mass spectrometric analysis.”

Fortunately, the data from the report provide a general fact-based framework for discussing the feasibility of detecting hGH in urine. For example, an effective test using current methods would require about four times the volume of urine currently collected from a competitor for analysis. This, the report concludes, suggests that for a urine test to be successful, a method that concentrates hGH even more is needed. Of note, only the nanoparticle method had the potential capability of detecting relevant types of hGH in urine. The only approach that might work, explained Catlin, is to develop aptamers directed against hGH or markers of hGH use.

Others who helped conduct the hGH research study and contributed to the article include T.K. Bane of Immunalysis Corporation, Miranda Timmons of ADR, and Steve Kauffman of ADR.

Catlin is “widely considered the most respected chemist in the sports anti-doping community” (*Washington Post*, March 13, 2007). He founded the first anti-doping lab in the United States, the UCLA Olympic Analytical Laboratory, and today heads ADR. He and his team have been instrumental in detecting such performance-enhancing drugs as artificial testosterone, the blood boosters darbepoetin alfa and CERA in the equine, and the designer steroids norbolethone and THG.

ADR’s mission is to help rid sport of performance-enhancing drugs by creating novel and lasting solutions to modern-day doping issues. The Los Angeles-based, ISO 17025-accredited nonprofit organization focuses on research, specialized analysis, education, program development, and collaboration.

In addition to the NFL/NFL Players Association Research and Education Foundation and MLB, major contributors to ADR include Amgen and the Equine Drug Research Institute.

For more information about Anti-Doping Research and its activities, visit ADR’s website at www.antidopingresearch.org, e-mail ADR at info@antidopingresearch.org, or call ADR’s offices at 310-482-6925. To show support for ADR and its work, join it on Facebook at <http://apps.facebook.com/causes/160495?m=3flcca43>.

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