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Landis putting lab to the test

The Tour de France winner's team of experts uses the Internet to spark debate about doping charges. 'I have nothing to hide,' he says.

By Michael A. Hiltzik
December 23, 2006



'Nothing to hide'
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Experts for Tour de France champion Floyd Landis, tapping a worldwide pool of scientific knowledge via the Internet, are marshaling a detailed rebuttal to charges that the cyclist took testosterone to fuel his comeback victory in last summer's race.

Landis' team has posted online the laboratory reports on which the charge is based. This step, unprecedented in an anti-doping case, has allowed independent scientists to study the evidence against Landis — 370 pages of technical documentation.

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The result is a vigorous debate on Internet message forums and bulletin boards about the science underlying the charge and whether Landis, successor to Lance Armstrong as America's leading competitive cyclist, has been unjustly accused.

Landis' representatives say they have gleaned a wealth of clues about how to attack the evidence when the case goes before an arbitration panel, probably this spring.

Landis' team argues, among other things, that the Paris laboratory that tested his urine sample miscalculated the concentration of testosterone and related substances and overlooked signs that the sample had been contaminated.

The U.S. Anti-Doping Agency (USADA), which is prosecuting Landis, has declined to discuss the case because it is still under adjudication. If the charge is upheld, Landis will be stripped of his Tour de France title and could be suspended for two years.

Landis' airing of the evidence against him and his demand that his arbitration hearing be open to the public is a challenge to USADA and the World Anti-Doping Agency (WADA), which are known for their resistance to outside scrutiny. A link to the documents is available at <http://www.floydlandis.com>.

"I have nothing to hide, and I'd be happy if people could get to see how the system works," Landis, 31, of Murrieta, said in a recent interview. "Since the system is rigged against me and the odds of winning are small, whether you're guilty or innocent, at least I could demonstrate to the world that I was innocent."

Landis' defense is two-pronged. One element is his contention that the National Laboratory for Doping Detection in Paris made technical and analytical errors.

In testosterone cases, the first level of testing is to measure the ratio of testosterone to a related hormone, epitestosterone. A ratio higher than 4 to 1 triggers a further test based on the measurement of trace isotopes of carbon in the urine sample.

The documents Landis has posted show that the lab measured the so-called T/E ratio in his urine sample at least three times and arrived at three different readings. One reading found a ratio of 4.9 to 1. A second reading was 5.1 to 1, and the third was 11.4

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Given the discrepancy, the lab should have halted the test and checked its equipment and procedures, Landis said.

The lab's data also show that the level of epitestosterone declined rapidly between the first and third tests — a sign that contaminants might have been reacting with the epitestosterone to produce inaccurate results.

The lab director, Jacques de Ceaurriz, did not respond to a request for comment.

The second prong of Landis' defense is that WADA's standards for positive tests are so broad that the same sample declared positive by one of its accredited anti-doping labs might be declared negative by another.

The Paris documents indicate that the lab's standard for concluding, after carbon-isotope testing, that there is synthetic testosterone in a sample is looser than that of UCLA's Olympic laboratory, the leading anti-doping lab in the world.

The documents also show that the scientific expert Landis hired to witness the test on his backup urine sample cited shortcomings in the Paris lab's analysis at the time.

Douwe de Boer, former science director of WADA's laboratory in Lisbon, Portugal, wrote that the Paris lab had failed to verify "according to the minimal WADA requirements" that its measurements of testosterone and epitestosterone were not skewed by the presence of other compounds in the urine sample.

"Therefore, any official conclusion regarding to the T/E ratio.... is and will be premature," he wrote in notes he provided to Landis and the lab.

Testosterone, which is naturally present in the body, can be taken in synthetic form via injections or skin patches to promote muscle development and strength.

Banned in sport since the late 1980s, it is most often used as a doping agent as part of a long-term training regimen. Sports experts are divided over whether a one-time dose, which Landis is accused of taking, could have any performance-enhancing effect.

Landis' defense team calls its decision to publicize the evidence against him the "wiki defense," referring to an online application allowing members of the public to collaborate on encyclopedias, dictionaries, computer programs and other services.

The idea is to counteract the advantages that anti-doping agencies have in bringing cases against athletes. As The Times reported this month, WADA uses a zero-tolerance standard, punishing athletes for unintentional or inconsequential violations of doping rules.

Runners, swimmers, skiers and other athletes have been suspended and even stripped of Olympic medals for concentrations of banned substances too small to affect performance, The Times found. Athletes have been sanctioned even when there was evidence that they consumed prohibited substances unwittingly through adulterated nutritional supplements.

When athletes appeal doping charges, they must follow rules that give WADA and USADA the benefit of the doubt in arbitration and shift the burden of proof to the accused. The rules also limit the documentation that the agencies must provide to defendants.

The documents given to Landis, for instance, include only tests results for the urine samples taken July 20, immediately after his come-from-behind performance in a particularly grueling stage of the Tour de France.

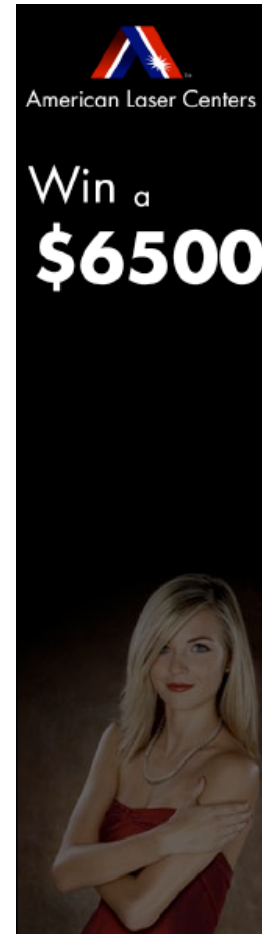
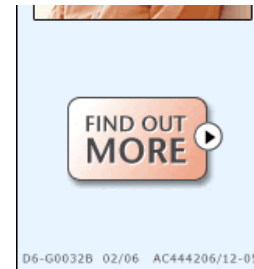
The rules don't require the lab to provide documents demonstrating its overall accuracy — reports on other athletes' samples or on WADA-sponsored proficiency trials, for example.

In part because of these provisions, no American athlete has ever prevailed over USADA since the system was put into effect in 2000.

With the wiki defense, Landis's team can subject the prosecution's scientific evidence to global scrutiny.

"There has been a tremendous amount of knowledge-sharing among the folks online, even among those who disagree about what the tests say," says Kevin Dykstra, 47, an amateur cyclist and professional chemist who has posted extensive analyses of the lab reports under the online alias "Duckstrap."

Dykstra's posts criticize the Paris lab for failing to demonstrate that it measured Landis' testosterone and epitestosterone accurately and that it could reach consistent results



with multiple tests.

"To make the kind of accusations they made as publicly as they did, this has to be a slam-dunk," he says. "And this was not a slam-dunk. The data that's here leaves ample room for doubt."

Arnie Baker, a San Diego physician and cycling coach serving as Landis' medical director, said experts in mass spectrometry, a technique used in the second stage of testosterone testing, have contacted him to point out apparent deficiencies in the work of the Paris laboratory.

Callers have studied "everything from the pressures they used to the sampling times and the number of samples," Baker said. The volunteer experts, he said, have "helped me get to conclusions faster than I might have on my own."

Landis's case burst into the open July 27, when his cycling team, Swiss-based Phonak, announced that an initial screening test had tested positive for testosterone doping after his triumphant effort on Stage 17 one week earlier.

A later carbon-isotope test was said to have confirmed the screening, and tests on Landis' backup sample, undertaken at his request, were reported to have confirmed both findings.

Landis' appearance on "The Tonight Show" was canceled, as was a parade in Murrieta.

The cyclist initially offered several possible explanations for the test result. Among them: that his testosterone-epitestosterone ratio might be naturally high, and that the test results might have been skewed by his WADA-approved medication for a degenerative hip condition or by the alcohol he drank the night before the urine sample was taken.

Landis said he has spent \$150,000 on his defense. "If it goes on like this for a year, as it most likely will, I won't have much left, if anything," he said. "If I really wanted to fight this in the best way possible, what I really need is \$3 million."

Last week, he announced an effort to raise a \$2-million defense fund.

The Paris lab is one of the busiest and most respected of the 34 anti-doping facilities accredited by WADA. But it is also one of the most controversial.

In 2005, two top Olympic movement officials demanded that WADA suspend the lab for allegedly violating research confidentiality rules when it claimed that its tests on 6-year-old urine samples showed that Armstrong, the seven-time Tour de France champion, was guilty of doping at the 1999 race.

WADA rebuffed the demand, even after an independent investigation concluded that the lab's tests of the 1999 samples were invalid and that its actions violated WADA rules and French law.

On Wednesday, an international arbitration panel cited another rules violation by the Paris lab in throwing out a testosterone case against Spanish cyclist Inigo Landa. Landa had been suspended for testing positive at a 2005 race.

The lab allowed a technician who had handled the original analysis of the racer's sample to participate in the test of his backup sample, which is forbidden by WADA regulations. Landa had faced a two-year suspension for testing positive at a 2005 race.

The tests for testosterone doping are often assumed by the public to be definitive. In fact, they are subject to uncertainties.

The T/E standard is based on the assumption that the normal ratio between the two hormones is 1 to 1. But that premise has not been consistently verified by scientific studies.

When the T/E ratio test made its first appearance in 1984, it was used to discipline a Japanese Olympian whose sample was recorded at 10 to 1. Later medical tests showed that the elevated ratio was physiologically normal for him.

Evidence also exists that mishandling urine samples can generate false positives. In 1994, British runner Diane Modahl received a four-year suspension for testing positive with a T/E ratio of 42 to 1.

Two years later, after a legal battle that cost her more than \$500,000, Modahl proved that the lab had left her sample in a heated room for two days, promoting a chemical reaction that drove up its testosterone reading. She was reinstated, but failed in an attempt to win compensation from British sports authorities in court.

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