

Croatian Institute for  
Toxicology and Anti-Doping  
**ANNUAL REPORT 2013**



INTRODUCTION	4
IMPLEMENTATION AND AMENDMENTS OF LAWS AND STANDARDS	6
DOPING CONTROLS AND RESULTS MANAGEMENT	6
DOPING PREVENTION	8
INTERNATIONAL COOPERATION	14
THERAPEUTIC USE EXEMPTIONS	15
RESEARCH AND DEVELOPMENT	16

# INTRODUCTION



# HRVATSKO **NE!**DOPINGU

In 2012, the Anti-Doping Department of the Croatian Institute for Toxicology and Anti-Doping (CITA) laid the firm foundations for a systematic and continuous action and, through a number of doping tests, vividly presented one of the purposes of our existence to the Croatian sports public. In 2013, we had the opportunity and the reason to change our practice and the method of our operations from the preceding year.

Our aim in 2013 was to balance as much as possible the number of in-competition doping tests with out-of-competition doping tests. What we aspired to was to obtain as close as possible an ideal ratio between in and out of competition doping tests (50%:50%).

A significant progress was made with the use of APLIKATA software for the planning, supervision and storage of doping controls information.

According to the UNESCO report regarding the monitoring of compliance with the Convention, **Croatia is within the compliance limits, holding the position between 7 and 8** (best position so far) on the scale. Total range of compliance limits is determined on a scale from 1 to 10.

Employees of our Department took part in various international conferences and projects.

4 |

In the preceding year, our major efforts were invested into the doping prevention, where we dedicated our attention to work with young athletes, but without neglecting senior national team members either. Our task was to introduce as many athletes as possible into the consequences of doping. Doping Prevention Sector of the Anti-Doping Department was sending positive anti-doping messages, including **1975 athletes and support personnel**, through lectures as well as through the Athlete Outreach Program. On our website and in our bimonthly magazine **NE!DOPINGU** (NO! to Doping) we continuously notify, inform and educate all persons participating in sports in any way.

We have also issued the **new 2014 Prohibited List** and distributed it to all national sports federations through the Croatian Olympic Committee. This year as well as the year before, the List was prepared and printed in two formats: A5 and pocket size, so that athletes may have them along at all times.

We have also issued the second version of the Rules, whereby we have achieved better cooperation with all national sports federations in terms of understanding of anti-doping.

We may well say that in 2013 we achieved all that was set out in our 2013 Plan. We have had excellent cooperation with the Croatian Olympic Committee and we must add that our cooperation with all Croatian sports federations is improving with every year.

# REPORT



## **IMPLEMENTATION AND AMENDMENTS OF LAWS AND STANDARDS**

Following our consultations with legal experts and the language-editing of the first version of the Anti-Doping Rules, the second version of the Rules was completed in May. The amendments were checked by the WADA's Code Compliance, Standards and Harmonisation. The second version of the Rules was approved by the Management Board of the CITA. The Rules started to apply after a relevant conclusion at the meeting of the Board of the Croatian Olympic Committee in July about the implementation of the Rules as an indispensable document in the anti-doping in sports. The Rules were published in 800 copies and distributed through the Croatian Olympic Committee to national federations, clubs and sports professionals. The amendments to the Rules led to improvement of the activities of the Disciplinary Panel and the Appeal Panel of the CITA.

## **DOPING CONTROLS AND RESULTS MANAGEMENT**

Our aim in doping control has been to even up as much as possible the number of in-competition controls with out-of-competition controls in 2013 and to get as close as possible to an ideal ratio (50%:50%). In the year before, our objective was the quantity in the way to have as many athletes as possible becoming aware of our presence.

This year, we had total 784 tests. Out of that, there were 605 within the national testing program and 178 within the international cooperation. The national program included 312 in-competition tests and 293 out-of-competition tests. Thus we obtained an almost ideal ratio of these two types of tests (51.6%:48.4%) and reached our goal. In this way, we achieved the quantitative and the qualitative balance in the national program of testing. Within the scope of the international cooperation, there were 162 in-competition tests and 16 out-of-competition tests. Out of total 16 out-of-competition tests, blood was taken in 4 cases as biological sample.

The Registered Testing Pool included approximately 70 athletes. The group was revised 4 times per year (every 3 months). The aim of the revisions was to always have (by objective criteria) best athletes in the Registered Testing Pool.

All available candidates for the Winter Olympics in Sochi were tested in out-of-competition testing.

In the course of the preceding year, numerous possibilities of the ADAMS software were used by the Department in its activities. All athletes from the Group designated for the testing were trained in use of ADAMS to be able to provide their whereabouts information in compliance with the International Testing Standard. The Department provided 24-hour user support to the athletes for entry of their whereabouts information in ADAMS via phone.

In 2013, based on the deficiencies observed in the existing forms used for doping control, new doping control forms were designed and introduced in practice. The use of the new forms additionally improved the quality of doping control and the quality of controllers' work.

There were 3 accreditation courses and 4 re-accreditation courses for doping controllers.

Since 1 January 2013, the APLIKATA software has been used by the Department in the planning, supervision and storage of information about doping controls. Its application brought a significant improvement in the quality of services.

The supervision of the doping controllers' work has intensified. The supervision was conducted by direct control at competitions, analysis of doping control forms and analysis of data on the conducted doping controls from the newly introduced APLIKATA software.

The sport in which most tests were conducted was football, where 86 samples were taken, followed by basketball with 70 samples, fencing with 67 samples, handball (60), water polo (53), volleyball (52), swimming (45) ...

Most tests in the national program were conducted in football (85), and in the international program at the World youth and junior fencing championship (36).

Among total 605 tests in the national program and the results obtained until 31 December 2013, in 11 (1.8%) cases the finding was atypical or adverse. There were 5 (0.8%) adverse findings. Total number of atypical findings was 6 (1.0%). In the course of last year, we had 8 missed tests in the national program. Those were the cases in which the planned doping control was not conducted due to the athlete's failure to be available for test in due time and at due place. In 7 cases, the athletes were penalized by reprimand according to the Rules. In one case, the reprimand was not issued due to objective circumstances where it was impossible for the athlete to perform their obligations.

### **Disciplinary Panel of the CITA had 6 meetings in 2013:**

7 |

1. 2 May 2013, THC, judo, athlete - 6-month suspension
2. 23 May 2013, methylhexanamine, box, athlete - 6-month suspension
3. 4 June 2013, refusal to provide sample, body building, athlete -2-year suspension
4. 11 June 2013, refusal to provide sample, body building, athlete - 2-year suspension
5. 13 June 2013, hydrochlorothiazide, amiloride and canrenone, body building, athlete -2-year suspension
6. 18 July 2013, athlete doping, box, coach - suspension of 2 years and 6 months

### **Appeal Panel of the CITA had 4 meetings in 2013:**

1. 17. June 2013, THC, judo, athlete - annulled 6-month suspension
2. 11 July 2013, hydrochlorothiazide, amiloride and canrenone, body building, athlete - confirmed 2-year suspension
3. 16 July 2013, refusal to provide sample, body building, athlete - confirmed 2-year suspension
4. 25 September 2013, athlete doping, box, coach - reduced original suspension from 2 years and 6 months to 2 years

In all the atypical findings, additional tests were made and by application of IRMS during the diagnostic laboratory procedure, it was established that there was no exogenous introduction of prohibited substances.

In 2 cases of adverse findings (Category S9 - Glucocorticosteroids from the 2013 Prohibited List), the management of results based on the submitted medical documents led to the conclusion there was no violation of the Rules.

## DOPING PREVENTION

In 2013, a number of education and information projects were conducted as recommended by WADA. Through prevention programs in form of lectures, we tried to familiarize as many athletes as possible with the consequences of doping. We specifically highlighted the health risks but did not leave out the ethical consequences either.

The program is designed for a long-term action with the intention of spreading the values that would assist in the creation of a healthy attitude and ethical principles in athletes. Sport free of doping should become the principle and the personal criterion of each individual athlete.

Our target groups vary - from national team players and "A" class athletes, registered clubs, national sports federations, doctors, lawyers and judges, ranging to primary school and secondary school children.

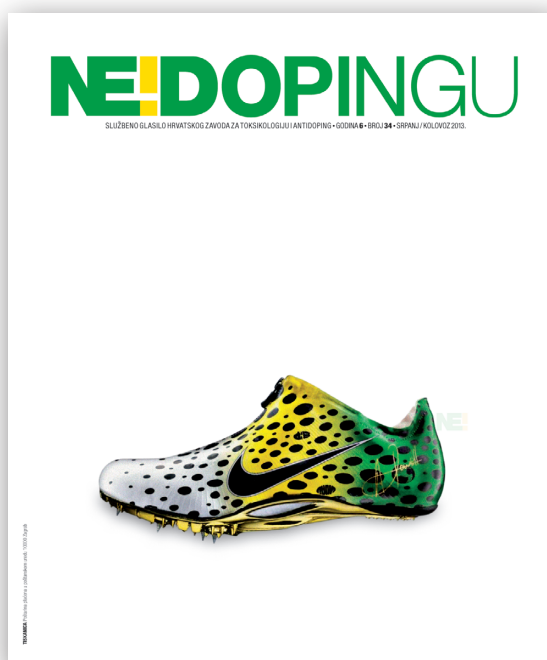
Our points of contact were: national athletic championships of schools, various international athletic tours, training camps, sports camps, national federations, conferences and meetings related to sports.

Forms of communication were: our website, **NE!DOPINGU** magazine, mobile information points (desks), education materials (brochures, leaflets, merchandise such as T-shirts, caps, pens, balls), lectures, presentations, conferences.

The year 2013 was a year in which we worked a lot with young people.

We advised them on how to avoid the risk of adverse finding on doping, and how to recognize a doping risk where they do not want to use doping.

We drew their attention to risks of food supplements, which often may include some of the prohibited substances.





We showed them the process of doping control to prepare them for what they would experience should they remain active in sports.

We taught them what they are supposed to do where they have any medical conditions or diseases. We presented them a procedure governing the use of prohibited substances for therapeutic purposes.

On mass athletic events, our Athlete Outreach Program served for additional education for young people in form of an anti-doping quiz.

Doping information are regularly published and updated on our website. Each specific doping case in Croatia is notified on our website and a press release is sent to all Croatian media. In 2013, [www.antidoping-hzta.hr](http://www.antidoping-hzta.hr) had 434,000 clicks and 18,870 visits.

In addition to the website, another important medium for our messages and education is our bimonthly magazine NE!DOPINGU published for six (6) years continuously. It deals with current topics in the field of doping, all the recent achievements in the doping control area, history of doping, interesting doping cases (celebrity athletes, specific substances).

There were 49 lectures, attended by total 1075 participants. Three Athlete Outreach Programs covered 900 participants. Overall, the Doping Prevention sector sent positive anti-doping messages to some 1975 athletes and support personnel.

9 |

## Lectures held in 2013

### ► January

Handball Club Lokomotiva (juniors and seniors, women), 30 participants

Judo National Team (seniors, men and women), 50 participants

Kickboxing (men and women), 16 participants

Kayak, canoe (coaches), 12 participants

Rock & roll (seniors), 10 participants

Bicycling (seniors), 6 participants

### ► February

Croatian Dancesport Federation (cadets, juniors, seniors - M and F), 30 participants

Handball Club Dubrava (seniors, 1st league), 20 participants

Swimmers with disability (M and F), 20 participants

### ► March

Hockey Club Mladost (younger and older cadets), 25 participants

Hockey Club Zagreb (younger and older cadets), 15 participants

Hockey Club Medveščak (younger and older cadets), 15 participants

**► April**

Ministry of Interior, Valbandon (lawyers, judges, policemen), 60 participants

Volleyball Club Mladost (juniors and seniors, women), 30 participants

**► May**

Swimming Club Dubrava (children aged 9 to 12), 30 participants

Handball Club Dugo Selo (cadets), 15 participants

Handball Club Velika Gorica (seniors, 1st Croatian Handball League), 15 participants

National Women's Handball Team (seniors), 22 participants

Handball Club Dugo Selo (juniors), 40 participants



10 |

**► June**

Boxing Club Omega (seniors), 10 participants

Karate Club Hercegovina-Zagreb (juniors, seniors, men and women), 10 participants

Boxing Club Sesvete (juniors and seniors), 20 participants

Croatian Wrestling National Team (seniors), 10 participants

Wrestling Club Metalac (seniors), 15 participants

Croatian Biathlon Federation (senior national team, coaches and leaders of the Federation), 18 participants

**► July**

Athletic Club Dinamo (long-distance runners), 13 participants

Athletic Club Dinamo-Zrinjevac (sprint runners), 13 participants

Karate Club Maksimir (cadets and juniors), 10 participants

▶ **August**

Football Club Bjelovar (juniors and seniors), 12 participants

▶ **October**

Wrestling Club Sesvetski Kraljevec (cadets, juniors and seniors), 50 participants

Table Tennis Club Popovec (cadets and juniors), 15 participants

Football Club Zelina (juniors and seniors), 40 participants

▶ **November**

Lectures to students of the Primary School Augusta Šenoa (5th-8th class), total 16 lectures, 345 participants

▶ **December**

Zagreb Dancesport Federation (juniors and seniors), 36 participants

### **In 2013, we performed three Athlete Outreach Programs.**

We spent three days at the international U-12 hockey tournament known as "Green Puck" held 8-10 March at the Zagreb Fairground skating rink. The tournament was specific for its competitive but also educational dimension. For that reason it was held under the name „Doping is not (h)O(c)K(ey)“.

The Anti-Doping Department educated young hockey players about the doping hazards through the Athlete Outreach Program. Our info desks were approached by 140 young athletes, but also by all their support personnel. Health risks of doping were also discussed with the athletes' parents.

At the end of the three-day competition and as we spent the whole days educating the children athletes, the central point of the event and the culmination of the anti-doping education was a quiz held on the ice centre where all teams participated.

As this was the youngest age that we ever dealt with, we had feared that their concentration will be difficult to keep. We had also thought that the doping problem was quite complex and that such a young group of children might be unable to comprehend what we had prepared for them. The experience we had after the event convinced us that the youngest audience was best recipient of our messages. The Athlete Outreach Program was evaluated by our neighbours, coaches and athlete support personnel from Serbia and Slovenia, participants in U-12 tournament, as an excellent method of education of the youngest participants in sports.

In the period 6-16 April 2013, Poreč was the host of the World Cadet and Junior Fencing Championship. Some 1,200 participants from 30 countries of the world competed in the two sports halls, City Hall Žatika and Intersport.

Interest was attracted not only by the sports arenas but also by our info desks of the International Fencing Federation (FIE) and the Anti-Doping Department of the CITA. The Athlete Outreach Program was organized by the International Fencing Federation with the assistance of the CITA personnel in performance of this exceptionally important task, education of young fencers. Coordinator of the program of great significance for WADA, present at all the Olympic Games, world championships and other great competitions, was Dr. George Ruijsch van Dugteren, Chairman of FIE Anti-Doping Commission. In four days of education, including an anti-doping quiz and an interview with athletes, the info desks were visited by 400 athletes. This may not seem much considering total number of competitors, but this is a specific approach demanding from the educators an interview with every person coming at an info desk. From that point of view, there is a reason for satisfaction.



12 |

What made this education different from all the others were the prizes awarded by the FIE on daily basis. In addition to the usual gifts, such as T-shirts, caps, anti-stress balls, USB sticks, and badges, a particularly alluring was a 100 EUR prize randomly drawn and won by three young athletes, visitors of our desks.

To avoid a wrong impression, it should be noted that by the end of the first day, the athletes were not aware of the cash prize, and there were already a hundred of them approaching our education team. We may say they were prompted to approach not by cash winning but by their wish to know more about doping. The realisation there would be cash prizes lifted up their interest only to some extent. We don't think that should be held against them!

28 April - 3 May 2013, we were in Poreč at the National Championship of primary and secondary schools and children with autism and learning difficulties.



Our Department staff implemented the Athlete Outreach Program. It was an anti-doping quiz and education on doping in sports. Our info desks were visited by some 300 participants in the National Championship finals. In the first three days of May, children with autism and children with intellectual difficulties were competing. There were 148 students, 58 coaches, 29 schools and centres. The group of children competed in swimming and athletics, divided by degree of disability - moderate and light, age, and years. The young group were children aged <15 years and older group were children <21 years. We monitored most of the competitions but we also talked to these amiable athletes and their coaches. Our topic was not doping - we talked about sports and health in general.



The lecture different from our usual lectures held in the foregoing groups was the one in Valbandon. On 17-18 April, the designated education course was held about combating of drug abuse, and part of it was dedicated to combating the abuse of medications in sports. The aim was to introduce the judges, state attorneys, lawyers and representatives of the Ministry of Interior into the challenges of new drugs, their availability in Croatia, the role of the Early Warning System in case of new psychoactive substances in Croatia, as well as novelties in legal provisions related to narcotics, abuse of drugs and substances prohibited in sports (doping) in cooperation with the Office for Combating Narcotics Abuse, Judicial Academy and Ministry of Interior.

A lecture on the topic of Doping in Sports was held by the Head of the Anti-Doping Department of the Croatian Institute for Toxicology and Anti-Doping. In his half an hour lecture, he presented the history of doping and its health risks. He placed specific emphasis on the Prohibited List as one of the foundations of the harmonized anti-doping activities and one of five international standards for all national anti-doping organizations, signatories of the World Anti-Doping Code.

## INTERNATIONAL COOPERATION

In Strasbourg, on 1 February 2013, two of our representatives participated in the meeting of the Ad Hoc European Committee for the World Anti-Doping Agency (CAHAMA).

On 19-20 March, the WADA annual symposium was held in Lausanne, Switzerland for NADOs, RADOs and IFs. There were 300 representatives from all around the globe. The symposium was attended by our two representatives (Anti-Doping Department, CITA). Anti-doping strategy and future of the anti-doping activities were discussed. The discussion included key priorities and trends in the global anti-doping environment with an emphasis on better practice, i.e. procedures and efficiency of anti-doping programs. The topics included optimisation of the existing tools and strategies but also the developing strategies - such as Athlete Biological Passport (ABP), ADAMS, smart testing and quality information.

Our delegation attended the meeting of the Monitoring Group on the Anti-Doping Convention of the Council of Europe, held in Strasbourg, 10-11 April and the seminar on doping education within the framework of the same Group, under chairmanship of Andorra. The seminar was held on 12 April, in Strasbourg.

On 19-20 September, in Paris, the 4th Conference of the Signatories of the UNESCO Resolution was held to review the implementation of the International Convention against Doping in Sport held on regular basis every alternate year.

The topics discussed at the Conference included: securing harmonization, coordination and efficiency in global anti-doping combat. Croatia was represented at the conference by a representative of the Ministry of Health and a representative of the Anti-Doping Department of the CITA.

In the Monitoring Report for the 4th Conference, Croatia was assessed as a country respecting the international standards in combating the doping in sports. In the assessment of compliance with the international anti-doping standards and implementation of anti-doping measures, Croatia was given the highest grade (Monitoring Report 4 CP).

In Strasbourg, 4-7 November 2013, two employees of our Department attended the Council of Europe meeting (CAHAMA and T-DO).

On 12-15 November 2013, two of our employees also attended the World Conference on Anti-Doping in Sports held in Johannesburg. The Conference adopted the text of the new World Anti-Doping Code, coming into force on 1 January 2015. New international standards were also adopted, also coming into force on 1 January 2015.

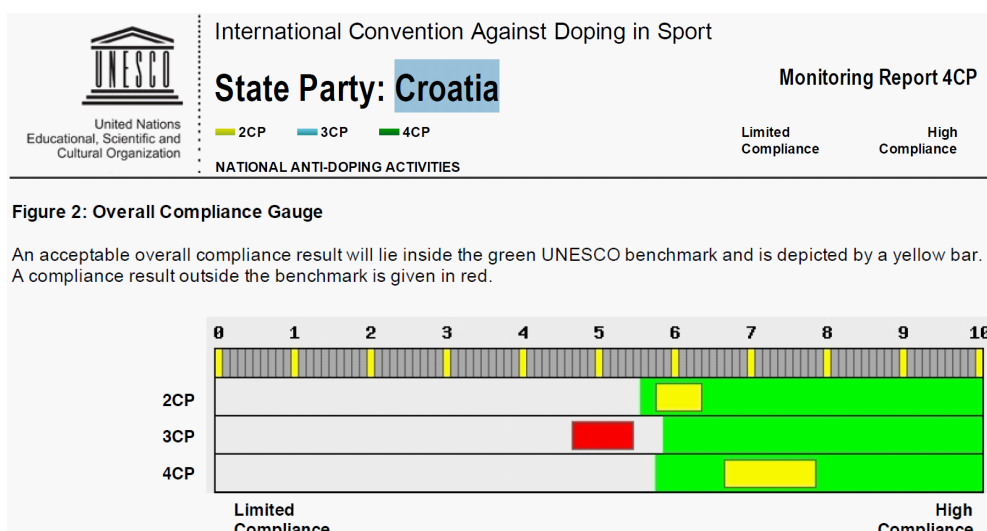
We also attended a workshop on anti-doping in sports, discussing the introduction of Athlete Biological Passport. The workshop was held on 28-29 November 2013 at the Seibersdorf laboratory. Various aspects of the implementation of the Biological Passport were presented.

Within the scope of the Protocol for Cooperation with the Agency for Anti-Doping Control of Bosnia and Herzegovina, an employee of the Anti-Doping Department held an invited lecture under the title: "Doping control in the Republic of Croatia with accent on most frequent errors of doping controllers" at the accreditation and reaccreditation course for doping controllers of Bosnia and Herzegovina, held on 8 December 2013 in Sarajevo.

## Monitoring the compliance with the International Convention against Doping in Sport

In accordance with the International Convention against Doping in Sport and Resolution 2CP/5.2, each signatory (hereinafter: State Party) is bound to implement the Convention. In addition to its implementation, an important task of the UNESCO is also monitoring of the compliance with the Convention. The monitoring is conducted through the collection of data from each state party about the implementation of the Convention, based on the UNESCO questionnaire. The information is collected every alternate year. The collected information is processed and the level of compliance is determined. Comparison of data for each country results in a report clearly showing the current status of compliance (data presented for the preceding year) and the trend compared to the preceding period. In general, the report outlines the direction of a specific country in view of compliance and implementation of the Convention provisions.

According to 2012 report (data marked as 4CP), Croatia achieved a significant progress compared to the status from 2010 (data marked as 3CP) and 2008 respectively (data marked as 2CP). Further, this report shows that Croatia is within the compliance limits and is at the position 7 and 8 on the scale (best position so far).



**Fig:** Compliance level with the International Convention against Doping in Sport by Croatia

## THERAPEUTIC USE EXEMPTIONS

The Therapeutic Use Exemptions (TUE) Commission held total five (5) meetings. The Anti-Doping Department of the Croatian Toxicology and Anti-Doping (CITA) received total twelve (12) TUE applications. Among all applications, there were nine (9) lacking grounds, which means 75% (9/12).

Three valid applications for TUE were approved by the Commission. They included one (1) subsequent approval (retrograde TUE for use of methylprednisolone for generalized hives) and two (2) approvals for medical conditions requiring further therapy (anterograde TUE). One of the two approvals concerned the use of growth hormone for therapy of retarded growth due to lack of somatotropin (retardatio somatica), and the second one concerned the use of prednisone due to rheumatoid arthritis worsening.

At the annual meeting of the TUE Commission held on 6 June 2013 in the CITA premises, in addition to the review of the Commission activities in 2012 a decision was also made to resolve any future TUE applications which lack grounds by administrative route. Namely, in such cases, the Commission meeting needs not to be held. The proposal was accepted by the present members and such procedure was established to be in compliance with the TUE Rules. The same meeting discussed the issue of the members' term of office of two (2) years, i.e. expiring by mid-November 2013. Considering their excellent cooperation, the term of office was extended to all the Commission members. Proposal was also made that an explanation in Croatian and in English should be issued with each decision on TUE. The proposal was accepted by all the present members. Another incentive that was accepted was that all the Commission decisions should be entered online in ADAMS database once the conditions are met, in order to increase the transparency of the procedure and access to the information within the scope of the anti-doping program.

Considering the decisions made at the annual meeting of the TUE Commission, the entering of the Commission decisions into the ADAMS online database has already started.

As in mid-November, the TUE Commission members' term of office expired, a meeting of the Management Board was held that confirmed the new term of office to all the TUE Commission members. The only change in the Commission was the change of chairperson. Assistant Prof. Sanja Popović Grle, PhD was substituted at that position with the new TUE Commission chairperson, Prof. Silva Zupančić Šalek, PhD.

16 |

## RESEARCH AND DEVELOPMENT

Within the scope of research of new immunochemistry methods for detection of peptides used for doping in sport, conducted in cooperation with experts from Ruđer Bošković Institute, the focus was transferred to development of modified enzyme immunoassay for detection of erythropoietin.

A procedure was developed for analysis of epitopes and paratopes of erythropoietin. Epitopes of erythropoietin were analysed by a new method combining two analytical techniques:

1. Detection of epitopes according to Hopp-Woods, based on analysis of hydrophathy profile and
2. Detection of bioactive sites of molecule by analysis of information spectrum of electronic-ionic interaction pseudo-potential.

Epitope complementary paratopes were defined by a heuristic algorithm of molecular recognition with in silico verification of structures by search of sequence databases by BLAST procedure. Epitopes and paratopes were synthesized and verified by spectroscopy. Linking of the epitope of the central receptor site responsible for biological function of erythropoietin molecule with the complementary paratope was confirmed by spectroscopy and thermophoresis, and the results were presented in the paper under the title: Design of an Antisense Peptide Targeting Receptor-binding Site of Human Erythropoietin by N. Štambuk, Z. Manojlović, P. Turčić, R. Martinić, P. Konjevoda, T. Weitner, P. Wardega and M. Gabričević; the paper is in preparation. We are currently working on development of new procedures for detection of erythropoietin, based on the obtained results.



The furnishing of the Advisory Centre for Anti-Doping and Rational Pharmacotherapy in Sport is soon to be completed.

In 2013, the Anti-Doping Department of the CITA received 30 written inquiries concerning medications and/or food supplements. Not only athletes but also other persons active in sports most frequently asked whether they may take certain food supplements or a specific medication. Some of their inquiries were related to the need for a TUE application. According to the inquiries by athletes and other persons in sports in 2013, there is a real need in athletes to be informed about these issues, and quite an extensive interest in food supplements which were a frequent cause of adverse findings in doping controls. For high quality monitoring of inquiries and replies to athletes about medications and food supplements, POPLOD database was created.

When it comes to the maintenance of the premises and equipment we have strengthened the Sample Storage Chain. In order to comply with the International Testing Standard as much as possible, we purchased a medical refrigerator for storage of biological samples until their transport to a WADA licensed laboratory. The refrigerator is provided with gauged temperature meters. We have prepared the Instruction for control and maintenance of refrigerator based on which the temperatures of the refrigerator and the room where it is placed are printed out every week. There is also 24-hour control with a phone alarm of any defect.



