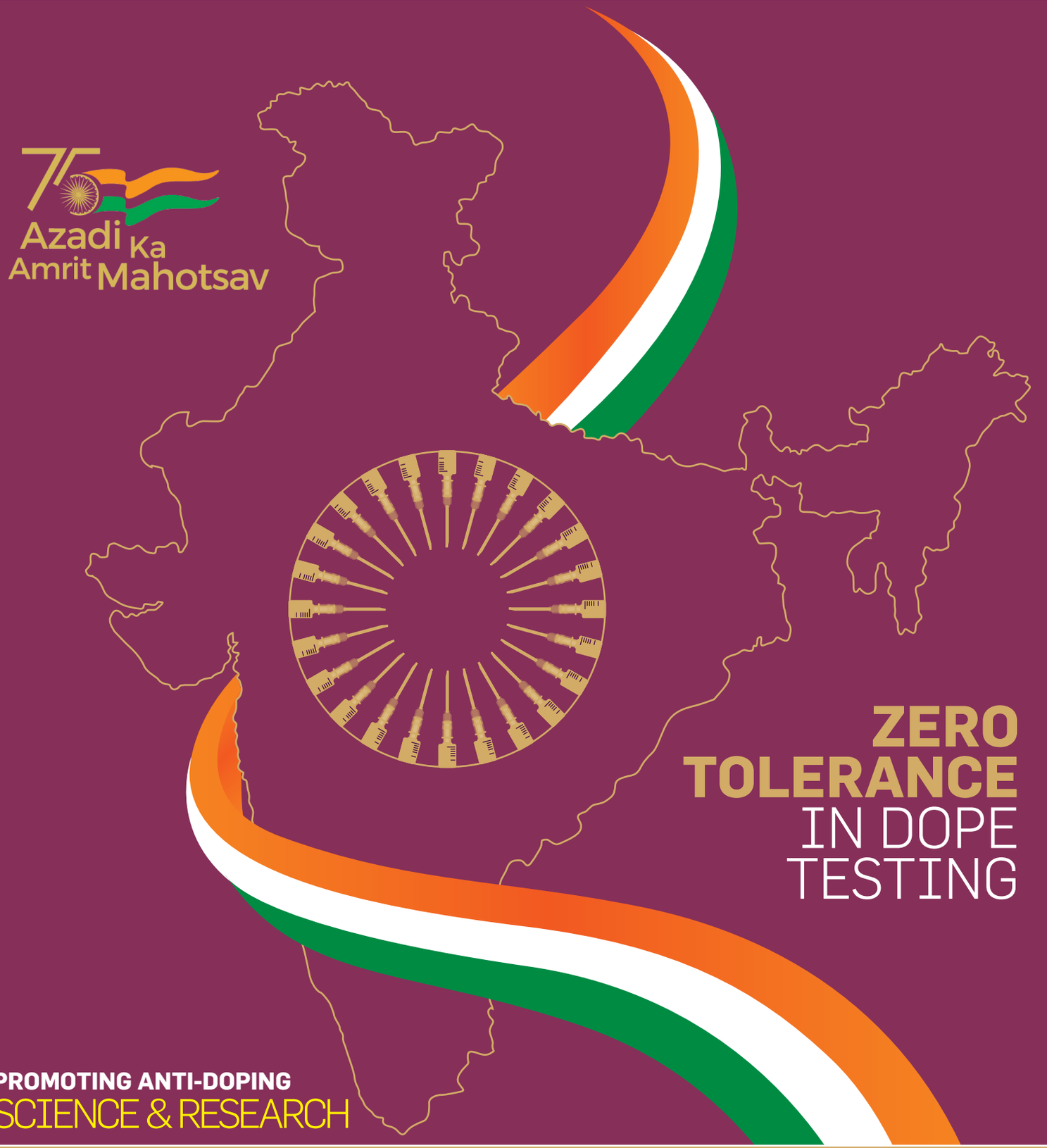
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newsletter

National Dope Testing Laboratory

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ZERO TOLERANCE IN DOPE TESTING

PROMOTING ANTI-DOPING
SCIENCE & RESEARCH

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From the desk of the Director

The National Dope Testing Laboratory (NDTL) has been established by the Government of India to promote fair play and clean sports. The Laboratory, having International accreditation (WADA & ISO/IEC-17025), is dedicated to analytical testing and research in human dope testing.

In an effort to realize India's longstanding potential for achieving independence in every field and keeping in tune with Government's 'Atmanirbhar Bharat', NDTL has recently taken up several initiatives of collaborative research with premier scientific research institutes of India in the field of Anti-Doping science and signed Memoranda of Understanding (MoUs) with the National Institute of Pharmaceutical Education and Research Guwahati (NIPER-G), and CSIR-Indian Institute of Integrative Medicine, Jammu (IIIM-J).

Over the years, a need has been felt to publish a Newsletter periodically to exchange ideas, enhance analytical testing, develop new methods and protocols in the emerging areas of Anti-Doping science. With the advent of new drugs and continuously evolving methodologies in testing, there is always a possibility for improvement through research and development.

We, at NDTL, remain prepared to share and acquire updated knowledge and advanced technology to meet these ever-changing challenges. I sincerely hope our maiden attempt in publishing this Newsletter will achieve these avowed goals.

At the very core of NDTL are its scientists, who work tirelessly on research and development of new analytical methods, and ensure that India sets high standards in Anti-Doping science research. I place on record my sincere thanks to the dedication of the Scientists and Staff of NDTL in bringing out this second issue of the Newsletter.

I also place my deep gratitude to the Hon'ble Minister for Youth Affairs and Sports, Shri Anurag Singh Thakur, Smt. Sujata Chaturvedi, Secretary (Sports), Shri Siddharth Singh Longjam, Joint Secretary (Sports) & and the Ministry for providing timely support, patiently bearing with NDTL, and encouraging NDTL to move forward with significant momentum since 2019 onwards.

Dr. P. L. SAHU
Director



NDTL at a Glance

The National Dope Testing Laboratory (NDTL) is an autonomous body of the Government of India. This is a premier analytical testing & research organization established in the country and mandated for dope testing of sportspersons at both- domestic as well as international levels. It is accredited by the World Anti-Doping Agency (WADA) and also accredited by the National Accreditation Board for Testing & Calibration Laboratories (NABL) as per ISO/IEC 17025:2017 for chemical and biological testing.

NDTL is one of the modern & state-of-the-art Laboratories equipped with highly sophisticated analytical equipment and instruments required for human dope testing. It is the only Laboratory of its kind in the country with the most advanced facilities and methods required for Anti-Doping science and allied research, while strictly adhering to the protocols of WADA International Standards for Laboratories (ISLs). Presently, it is one of the twenty-nine (29) WADA accredited Laboratories in the World. It abides by the WADA guidelines and is subject to periodical WADA assessment/review.

Consistently striving for excellence, NDTL regularly updates its equipment and enhances the skill of its analytical personnel. The Laboratory is equipped with highly sophisticated instruments like Liquid Chromatography-Mass Spectrometry (LC-MS/MS), Gas Chromatography-Mass Spectrometry (GC-MS/MS), and Isotope Ratio Mass Spectrometry (IRMS), etc. essentially required for testing of urine & blood samples from human sports. NDTL is participating in various External Quality Assurance Schemes (EQAS) like World Anti-Doping Agency (WADA), World Association of Anti-Doping Scientists (WAADS) and Swiss Centre for Quality Control (CSCQ). NDTL shares its expertise with many countries and extends dope testing services for over a dozen countries in Asia and beyond.



Mr. Anurag Singh Thakur is the incumbent Cabinet Minister for Ministries of Youth Affairs & Sports and Information and Broadcasting, Government of India. Prior to this, he was the Minister of State for Finance and Corporate Affairs. He is young, dynamic and has served the country in various capacities. Being a professional Cricketer, he has participated in the Ranji Trophy and also served as the President of the Board of Control for Cricket in India (BCCI). His ethics and enthusiasm for work has been a perennial source of inspiration for us to cherish and always keep us striving for achieving global standards in Anti-Doping Science, Research and Development.

NDTL Services

- Endeavours to deliver its services appropriate to the client's needs.
- Strives to continuously improve its services and maintain its quality performances.
- Aims at systemically promoting skills and knowledge of all its staff members by imparting appropriate training of the highest standards.

Reinstatement of Accreditation of NDTL-India by WADA



Mr. Siddhartha Singh Longjam, Joint Secretary (Sports) and Director, NDTL, Dr. P.L. Sahu interacted with Scientists and Staff of the Laboratory on the occasion of re-accreditation of the NDTL by WADA.

The National Dope Testing Laboratory (NDTL) regained the World Anti-Doping Agency (WADA) accreditation by WADA on 22nd December, 2021. Its accreditation has been reinstated to fulfill compliant with the latest version of the International Standards for Laboratories (ISLs) and with the WADA Technical Documents, 2021. NDTL's WADA accreditation was suspended on 20 August, 2019, based on non-compliances that were observed during the on-site assessment of the Laboratory held in September, 2018. The suspension of the NDTL had prohibited it from carrying out any anti-doping activities, including all analysis of urine and blood samples. WADA, on its part, has been providing continuous guidance and support to NDTL for improvement of processes and methodologies and it conducted an online remote assessment in June, 2021. After successful compliance with WADA international standards for laboratories, NDTL achieved re-accreditation form WADA after suspension of the Laboratory. With this, NDTL's Anti-Doping testing and activities have been resumed with immediate effect from 23rd December, 2021. To celebrate this big achievement of the Laboratory, the Joint Secretary (Sports), MYAS and Director of the Laboratory appreciated and motivated Scientists, Analysts, and Staff of the Laboratory. They appreciated that they have worked as a team, toiled very hard, even worked on Saturdays/Sundays and public holidays sitting late up to the night, sacrificed their personal comforts, and neglected their family obligations. The restoration of accreditation of the Laboratory is not only a boost to India's efforts to achieve the highest global standards of excellence in sport but has also enhanced the image of the Laboratory as well the country's image in the global arena.

NDTL achieved re-accreditation form WADA after suspension of the Laboratory. With this, NDTL's Anti-Doping testing and activities have been resumed with immediate effect from 23rd December, 2021. To celebrate this big achievement of the Laboratory, the Joint Secretary (Sports), MYAS and Director of the laboratory appreciated efforts from all staff.

Update on Pipeline Project on Synthesis of Reference Material with NIPER-G

The Laboratory had signed a Memorandum of Understanding (MoU) with the National Institute of Pharmaceutical Education and Research (NIPER-G)-India effective from 1st August, 2020 for research collaborations by combining their respective research capabilities in the areas of synthesis of reference standards of drug/metabolites, long-term metabolites of selective performance-enhancing substances. This MoU aims at initiating synthesis and characterization of reference standards for specific prohibited substances and metabolites, in consonance with Clause 4.3.2 & 4.3.3 of WADA ISL which stipulates that WADA-accredited laboratories are required to develop plans for research and development in the field of anti-doping science. NDTL has so far received three new reference materials such as Carboxy toremifene, Norethylmorphine HCl and Octopamine sulfate from NIPER-G by the end of December, 2021 and some of the molecules are under process to scale up the production batch of upcoming reference materials. NDTL Scientists have confirmed the purity of materials before distribution among the WADA-accredited doping laboratories across the world.

Remote Assessment of NDTL by WADA

The Remote Assessment of the Laboratory was organized by the WADA from 15th to 28th June, 2021. During the assessment period; the respective group with their team interacted with the concerned experts in respective sessions. The Lab Director & Quality Manager with its team had attended all the sessions. Consequently, the requisite documents followed by corrective action report (CAR) requested by WADA were submitted within timelines.

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Desktop Audit for Quality Assessment by NABL

The ISO/IEC Desktop Audit is mandatory for compliance with the WADA Code and gets a certificate of accreditation as per the standard of ISO/IEC 17025:2017. A desktop Audit usually happens once in a year by the National Accreditation Board for Testing and Calibration Laboratories (NABL). A Desktop Audit for quality assessment of the Laboratory had been successfully conducted from 20th April to 3rd May, 2021. All the requisite documents had been submitted and the Audit was found to be satisfactory by the NABL Assessment Team.



Mr. Siddhartha Singh Longjam, Joint Secretary (Sports) launching the 2nd Reference Material (Norethylmorphine)

Launching of 2nd Reference Material

A live launching of the 2nd Reference Material, i.e., Norethylmorphine (nor-EtM) was inaugurated by Mr. Siddhartha Singh Longjam, Joint Secretary (Sports) in presence of Mr. Arun Kumar Yadav, Director (Sports), Ministry of Youth Affairs and Sports (MYAS), Dr. P.L. Sahu, Director, NDTL & Scientists of the Laboratory and Dr. Perumal Saravana, Senior Project Officer (NADA) on 7th July, 2021.

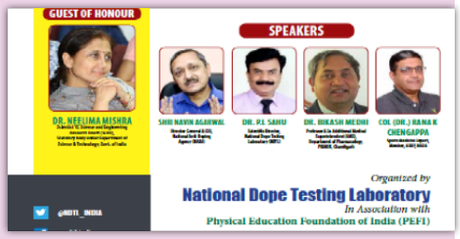
This compound, Nor-ethylmorphine (nor-EtM) comes under phase 1 priority Reference Materials listed among the 20 proposed compounds of the Laboratory. It was synthesized jointly by National Dope Testing Laboratory (NDTL) and National Institute of Pharmaceutical Education and Research Guwahati (NIPER-G). Thus, the availability of nor-EtM would help the Anti-Doping Laboratories to strengthen their testing capabilities as well as testing performance.

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National Webinar in Association with PEFI



The National Dope Testing Laboratory (NDTL) and Physical Education Foundation of India (PEFI) had jointly organized a one-day National Webinar on "Anti-Doping Science: Challenges and Future Perspective" on 28thJanuary, 2021. The Opening Ceremony & Welcome Remark was chaired by Dr. P. L. Sahu, Director, NDTL. The Key Note Address was delivered by the Chief Guest, Prof. (Dr.) Y. K. Gupta, Former Head, Department of Pharmacology, AIIMS, New Delhi. Dr. Neelima Mishra Scientist 'G', Science and Engineering Research Board (SERB), a statutory body under the Department of Science & Technology, Govt. of India was featured as the Guest of Honour. Dr. P.L. Sahu delivered a talk on the topic entitled "The Role and New Initiative of NDTL" in Technical Session-1 accompanied by external speakers



National Webinar on Anti-Doping Science: Challenges and Future Perspective Opening Ceremony & Welcome Remark was chaired by Dr. P. L. Sahu, Director, (NDTL) and Chief Guest Prof. (Dr.) Y. K. Gupta, Former Head, Department of Pharmacology, AIIMS, New Delhi and Dr. Neelima Mishra. Webinar closing remark by Dr. Piyush Jain, National Secretary, PEFI, India

named Dr. Bikash Medhi, Professor & Ex-Additional Medical Superintendent (AMS), Department of Pharmacology, PGIMER, Chandigarh, Col (Dr.) Rana K Chengappa, Sports Medicine Expert, Member - ADDP, NADA, and Dr. Ankush Gupta, Project Officer, NADA, respectively.

This webinar was conducted in three Technical Sessions where speakers presented their talk on the Anti-Doping Regulatory System in India, Physiological Aspect of Sports Person & How to assess Dietary Supplements for Sports Persons and Athlete Biological Passport. The closing remark of the webinar was proceeded by Dr. Piyush Jain, National Secretary, PEFI, India.





Launching of 1st Reference Material

A ceremony for the launching of the 1st Reference Material (RM) was inaugurated on 28th January, 2021 by Mr. Kiren Rijiju, former Hon'ble Minister of State (I/C) for Youth Affairs and Sports in presence of Mr. Ravi Mittal, Secretary (Sports) & Mr. Siddhartha Singh Longjam, former Joint Secretary (Sports Development) & CEO (NDTL). In this event, the WADA President and its team also participated through virtual mode. Other dignitaries who were present in this ceremony were Director, NIPER-Guwahati and its team, Prof. (Dr.) Y. K. Gupta and Dr. Neelima Mishra. This rarely available Reference Material (P-hydroxyl-Prenylamine) was synthesized by collaborative efforts of the National Dope Testing Laboratory (NDTL) and National Institute of Pharmaceutical Education and Research Guwahati (NIPER-G), for use in chemical testing in the field of Anti-Doping science in all WADA-accredited Laboratories. This initiative was taken by Dr. P.L. Sahu, Director, NDTL for the greater cause of promoting fair play in sports. NDTL has also distributed 5 milligrams of this RM to all the WADA-accredited Dope Testing Laboratories free of cost for the first occasion in the true spirit of our long lasting tradition of 'Vasudhaiva Kutumbakam' and in deference to the announcement made by the Hon'ble Minister of Sports.



Releasing of 1st NDTL Newsletter

The former Hon`ble Minister of State (I/C), Youth Affairs and Sports, Mr. Kiren Rijiju had visited the Laboratory on 28th January 2021 and released the 1st Newsletter of NDTL. Dr. P.L. Sahu congratulated all the Scientists and Staff to put their sincere efforts and Mr. Siddhartha Singh Longjam, former CEO, (NDTL) thanked the Laboratory for bringing out the 1st issue of the Newsletter.

Dr. P.L. Sahu congratulated all the Scientists and Staff to put their sincere efforts and thanked for bringing out the 1st issue of the Newsletter

Initiatives for Collaborations with AIIMS and IITs

The Laboratory is also moving towards firming up agreements/collaborative research on Anti-Doping Science at national and international levels including the All India Institute of Medical Sciences (AIIMS), Indian Institutes of Technology (IIT), and peer established WADA-Accredited Laboratories across the world. The future goal of the Laboratory is to establish a strong framework for research activities in collaboration between Laboratory and the research organizations and producing a platform for Anti-Doping community.



Agreement between NDTL and CSIR IIIM, Jammu



The Laboratory signed an Agreement with the CSIR-Indian Institute of Integrative Medicine (IIIM), Jammu on 11th January, 2021 for undertaking research collaborations by combining their respective research capabilities in the areas of synthesis of reference standards of drugs/metabolites, long-term metabolites of selective performance-enhancing substances. Apart from this, the research project will be extending to areas of *in-vitro* and *in-vivo* studies (PK studies) on the metabolites with the main emphasis on the national goals in the scope of dope testing and global positioning. In view of future perspectives, both the institutes will also explore the role of phyto-chemicals, in general, and phyto-steroids in particular, in dope testing purposes.

MoU was signed by Dr. P. L. Sahu, Scientific Director, National Dope Testing Laboratory (NDTL), Ministry of Youth Affairs & Sports and D. Srinivasa Reddy, Director, CSIR-Indian Institute of Integrative Medicine (IIIM-J), Canal Road, Jammu, Government of India on 11th January 2021 for research collaboration

In view of future perspectives, both the institutes will also explore the role of phyto-chemicals, in general, and phyto-steroids in particular, in dope testing purposes

Training on Advanced Analytical Technique by International Experts

Large peptide using HRMS Technique (Session-I and Session- II)



Training on Large Peptide using HRMS Technique imparted by Dr. Andreas Thomas (Germany)

Dr. Andreas Thomas (Germany) delivered a talk on Large Peptide using HRMS Technique in consecutive two sessions. The first session on "Basic Understanding & Analytical Method Development for Intermediate Storage" was organized via virtual mode on 17th April, 2021. The second session relating to Large Peptide Analysis was held on 1st June, 2021also through virtual mode. Both the sessions were attended by the Laboratory Scientists, Research Associates, and Analysts and they were exposed to new advanced approaches for sharpening their analytical skills to implement the same in dope control analysis.

General Discussion related to IRMS Technical data with Dr. Torre

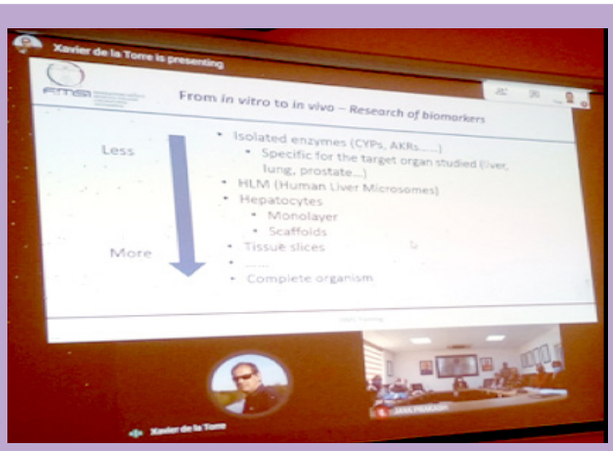
The Scientific discussions relating to IRMS technical data were held with Dr. Xavier de la Torre (Italy) in the month of November, 2021. The purpose of such discussions was to overcome the challenge of the Laboratory to develop an IRMS method as per WADA Technical updated guidelines and the sessions with Dr. Torre resolved the issue.

Implementing Dried Blood Spot (DBS) testing

On 3rd December, 2021, a discussion was held on HemaXis DB10™ blood collection device which is compliant to WADA guidelines and the same was accompanied by Eric Ödman, CEO at Dried Blood Spot (DBS) System for dried blood spot doping control. He emphasised unique and innovative medical device DBS System HemaXis DB10™ - which only requires 10 microliters of blood (it is a very tiny drop of blood) collected from the fingertip, transferred to a filter card on which the blood drop dries and the sample is then being sent to the lab for analysis. So far, advantage of advanced technology for blood sampling, i.e., the DBS System device can bring a revolution in blood collection with the ability of doing standardized sampling everywhere, at any time and by anyone.

GC-MS/MS: Fundamentals & Interpretations of Data

On 23rdJune, 2021, training on GC-MS/MS Fundamentals and Interpretations of Data was organized for Scientists, Research Associates and Analysts of the Laboratory. A talk on GC-MS/MS fundamentals and data interpretation was delivered by Lab Experts, Ms. Luisa Fernandez-Guillen and Dr. Maria Fernandez under the umbrella of Dr. Gloria Munoz Doping Control Laboratory, Madrid, Spain.



Training on Steroid Profiling on GC-MS/MS Analysis imparted by Dr. Xavier de la Torre (Italy)

Steroid Profiling by GC-MS/MS Analysis

As a part of continuous quality improvements in Laboratory activities, the training on Steroid Profiling on GC-MS/MS analysis including data interpretation was conducted on 26th February, 2021 through virtual mode. Dr. Xavier de la Torre, Scientific Vice-Director, Anti-Doping Laboratory, FMSI, Rome (Italy) was invited to impart training on the new advanced approaches and strategies to establish steroid profiling for GC-Ms/MS implementation in dope control analysis. This training was attended by Scientists, Research Associates, and Analysts.

General operation on GC/C/IRMS

On 8th January, 2021, a training on "IRMS – General operation" was imparted by Mr. Manoj Tank, Engineer, Thermo Fisher Scientific, India. In this, a general session for operation & handling of instrument was carried out for verification of performance of the instrument. The Laboratory Director, Quality Manager, Scientists and Analysts attended this practical training session for dope testing.

Training on Instrument and Quality Management System by National Experts

Sensitization on Good Laboratory Practice (GLP)



Training on Good Laboratory Practice (GLP) & Recent Updates on Regulatory Requirement Attended by Senior Officials of NDTL

The Laboratory Officials were invited to attend a training on "Good Laboratory Practice (GLP) & Recent Updates on Regulatory Requirement" conducted by the National GLP Compliance Monitoring Authority (NGCMA), Delhi on 4th March, 2021 at Sangam Hall, Lodhi Road, New Delhi. This training was attended by the Group Heads of Laboratory, Scientists, Quality Manager & Deputy Quality Manager to get acquainted with the current needs and updates on Good Laboratory Practice (GLP) for implementation and maintaining the applicable standards in the Laboratory. The said training was conducted by Dr. Ekta Kapoor, Scientist- 'F', National GLP Compliance Monitoring Authority (NGCMA)/ Drugs and Pharmaceuticals Research Programme (DPRP). The main aim of the training was to focus on the OECD Principles of GLP, of which Standard Operating Procedures (SOPs) are an integral part of the Laboratory.



Training conducted on GC-MS/MS- Tune interpretation by Mr. Ayush Jain from Agilent Technology, India.

GC-MS/MS: Operation/ Instrumentation/ Interpretations

On 17th February, 2021, a training programme on "GC-MS/MS: Fundamentals, Operational & Interpretations of Data" was conducted by Mr. Ayush Jain, from Agilent Technology, India for the implementation of data handling, quality control, and reporting of results for adverse analytical findings. The objective of this training session was to help Analysts & RAs for better handling and operation of the equipment.



Training on "Good Laboratory Practice (GLP) delivered by Dr. Ekta Kapoor (Scientist-'F') National GLP Compliance Monitoring Authority at Sangam Hall, Lodhi Road, New Delhi.



In-house Training on Quality Management System as per ISL

In-house Training on Quality Management System as per ISL

A series of in-house trainings on implementation of WADA ISL 2021, Cl. 5.0 & Code of Ethics was conducted in January, 2021. The trainings imparted were relating to "Impartiality & Confidentiality, Clean Desk Policy and Health Safety of Employees" as per ISL 2021 & ISO/IEC 17025:2017 and conducted on 19th & 20th January, 2021 by Mrs. Rano Sharma (Junior Analyst) and Dr. Manish Kumar Sharma (RA-1) working in the Quality Management System (QMS) Section. NDTL Scientists, Research Associates, Analysts, and Staff attended these training sessions for the implementation of WADA ISL ver. 11.0 Clause 5.0



14th Governing body & 13th General Meeting, (NDTL 2021-22)

Finance Committee Meeting

On 31st May, 2021, the 12th Finance Committee meeting of NDTL was held under the Chairmanship of Mr. Manoj Sethi, Joint Secretary & Financial Advisor, Ministry of Youth Affairs & Sports, and Government of India. Other Committee Members such as Mr. Siddhartha Singh Longjam, Joint Secretary (Sports) & former CEO (NDTL), Mr.Arun Kumar Yadav, Director (Sports), MYAS, Dr. P L. Sahu, Director, (NDTL) attended the said meeting. In this meeting, many important decisions were taken to further strengthen the Laboratory in compliance with WADA ISL. The agenda of this meeting was to discuss on approval of un-audited annual accounts and financial statements (Provisional) for the year 2020-2021.

Governing body & General Meeting, NDTL (2021-22)

On October 2021, the meetings of the 14th Governing Body & 13th General Meeting of the National Dope Testing Laboratory (NDTL) were held under the Chairmanship of Shri Anurag Singh Thakur, Hon'ble Minister of Youth Affairs & Sports. In this meeting, many important decisions and initiatives were taken to further strengthen NDTL for compliance with WADA ISL 2021.



Internal Research Review Committee (IRRC)

The 5th & 6th Internal Research Review Committee (IRRC) meetings were held under the Chairmanship of the Laboratory Director, Dr. P. L. Sahu on 14th July, 2021 and 29th September, 2021 respectively. These meetings were organized to evaluate the research activities and review the progress of research work carried out by the In-house investigations along with collaborative organizations (NIPER-Guwahati and IIIM-Jammu). The primary objective of this Committee (IRRC) is to review the scientific proposals submitted by the research investigators of NDTL and to ensure Laboratory research & development activities in the field of Anti-Doping science. In the said meetings, the status of pending research projects was reviewed and deadlines fixed to complete the projects on a priority basis. The Lab Director, also invited the new research proposals and encouraged newly appointed Research Associates to present their new research proposals in the next meeting with appropriate study plans, research costs, and timelines.

Prevention, Prohibition and Redressal meeting

Commemoration 8th Anniversary of sexual Harassment of women at work place, prevention, Prohibition and Redressal meeting



The Commemoration of the 8th Anniversary of Sexual Harassment of Women at Work Place, Prevention, Prohibition and Redressal meeting conducted for the female staff of the Laboratory

A meeting of the Internal Complaints Committee of the Laboratory was organized on December 9, 2021 to mark the 8th anniversary of the 'Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act'. The Chairperson highlighted the objectives of the said Act which represented a watershed moment for women's rights and in their fight against workplace or any other kinds of institutional harassment. The Chairperson emphasized on the "moral and consciousness bind" which is more important for humanity to stay healthy.

The Chairperson highlighted the objectives of the said Act which represented a watershed moment for women's rights and in their fight against workplace or any other kinds of institutional harassment

NIPER-G and NDTL Project Progress Review

The Laboratory signed an MoU with the premier pharmaceutical institute of India (NIPER-G) for synthesis of rarely available substances/metabolites to strengthen Anti-Doping community in all World Anti-Doping Agency (WADA) Accredited Laboratories. The Laboratory had initially planned with NIPER-G for synthesis of 20 molecules on a priority basis. Out of 20 substances/metabolites, the Laboratory has, in collaboration with NIPER-G. already synthesized P-hydroxyl-Prenylamine and norethylmorphine (nor-EtM). In order to review the progress of the project, two virtual meetings were held on 22nd March, 2021 and 22nd July, 2021 between Director, NDTL and Director, NIPER-G and the ongoing synthesis of Phase I and Phase II molecules were evaluated. In these meetings, discussions were also held on analytical data interpretation, stability study of nor-EtM and the status of synthesis of Phase-I and Phase-II molecules under the proposed timelines.

NDTL and Director, NIPER-G and the ongoing synthesis of Phase I and Phase II molecules were evaluated

Scientific Advisory Board (SAB)



Science Advisory Board (SAB) meeting organized under the Chairmanship of Prof. (Dr.) R.K. Goyal, Vice-Chancellor, Delhi Pharmaceutical Sciences & Research University (DPSRU), Delhi. Prof. (Dr.) Mario Thevis, Director, German Sport University, Cologne (Germany), Dr. Surinder Singh, Former Director, NIB & Vice-Chancellor, JSS University, Mysore, Dr. Srinivasa Reddy, Director, CSIR-IIM, Jammu, Prof. Saranjit Singh, NIPER, Mohali, Prof. S.K. Jain, Dr. S.K, Raza, former Director IPFT, Gurgaon, Dr. Anil Handoo, Hematologist, BLK hospital, New Delhi attended meeting through virtual mode via Google meet.

The Laboratory has constituted a Scientific Advisory Board (SAB) for guidance and exploring the research and development activities. A meeting of the SAB was held on 13thApril, 2021 under the Chairmanship of Prof. (Dr.) R. K. Goyal, Vice-Chancellor, Delhi Pharmaceutical Sciences & Research University (DPSRU), Delhi. Prof. (Dr.) Mario Thevis, Director, Centre for Preventive Doping Research, Institute of Biochemistry, German Sport University, Cologne (Germany) was invited as an International Doping Expert to participate in the said meeting. The meeting was organized in the Laboratory through virtual mode via Google meet.

All the members of SAB including Dr. Surinder Singh, Vice-Chancellor, JSS University, Dr. D. Srinivasa Reddy, Director, CSIR-IIIM Jammu, Prof. Saranjit Singh, NIPER, Mohali, Prof. S.K. Jain, Dr. S.K, Raza, former Director, IPFT, Gurgaon, Dr. Anil Handoo, Hematologist, BLK hospital, New Delhi attended this meeting. While two members namely Dr. P. L. Sahu and Dr. Surinder Singh attended the meeting in person, the rest of the members



attended the meeting through virtual mode through Google meet. The members recommended corrective actions to be put in place for their effective implementations of WADA Laboratory Standards. The members also shared their knowledge and experience for furtherance of the activities of NDTL in future.



Management Review Group (MRG) Meeting under the chairmanship of Mr. Siddhartha Singh Longjam, Joint Secretary (Sports) & former CEO, NDTL.

24th Management Review Group (MRG) Meeting

The Management Review Group (MRG) meeting was held under the supervision of Shri Siddhartha Singh Longjam, Joint Secretary (Sports) & former CEO (NDTL) on 25th March, 2021. The main objective of this meeting was to ensure the functionality of the Laboratory for the year 2020-21 as per ISO/IEC 17025:2017 and adherence to WADA ISLs for reinstatement of WADA of NDTL at the earliest. Highlighting the need for an effective Quality Management System (QMS), which is the corner stone of a doping control Laboratory, Shri Singh spoke at length to follow the requirements of WADA ISL. Thereafter, the Quality Manager presented the agenda which included the annual planning of the Laboratory including sample testing details, proficiency testing, Quality Management System manual and procedure, validation plan, key achievements, research plans and activities, Training and Education programmes, future plan, Management/ Staff of NDTL, General Body of NDTL, Governing Body of NDTL, etc. Apart from this, he also informed that the Laboratory has taken appropriate actions for implementing and adhering to WADA ISLs, Technical Documents (TDs), Technical Letters (TLs) including other guidelines & ISO: 17025 as well in advance before the target effective date(s).

Weekly Activities of the Laboratory

From 15th Feb, 2021, the Director, NDTL has been conducting weekly meetings of the Laboratory on every Monday to discuss and update technical & non-technical activities and to periodically monitor quality improvements and the progress of Laboratory activities.

Indian Council of Medical Research (ICMR) Expert Group Meeting

A team of Expert Group Members constituted under the leadership of Prof. (Dr.) Balram Bhargava, Secretary, Department of Health Research (DHR) & Director General, ICMR had a number of visits to NDTL in February, 2021 to review the previous Audit Reports, Standard Operating Procedures (SOPs) and to evaluate the Laboratory performance for compliance with the quality standards of ISO/IEC 17025:2017 and WADA ISLs. The said Expert Group was informed by the Laboratory Director that most of the required measures were put in place and all pending corrective actions had been submitted to WADA. Moreover, the Laboratory had kept in view the WADA observations, taken appropriate measures to overhaul its scientific and technological approaches in compliance with WADA ISLs.



Indian Council of Medical Research (ICMR) Expert Group Meeting under the leadership of Prof. (Dr.) Balram Bhargava, Secretary DHR & DG, ICMR at NDTL.

Meeting of CEO with NDTL Staff

On 30th January, 2021, Mr. Siddharth Singh Longjam, Joint Secretary (Sports) & former CEO, NDTL had a meeting to congratulated the entire team of the Laboratory Scientists, Research Associates, and Analysts for the launching of the 1st Reference Material as well as releasing 1st Newsletter in beginning of the year. He interacted and encouraged the NDTL staff to put sincere efforts for improving the quality of the Laboratory as per WADA ISLs.



An interaction session and delivered message from Mr. Siddhartha Singh Longjam Joint Secretary (Sports Development) & former CEO, (NDTL) to employees of NDTL

Research Projects and Research Publication at NDTL

NDTL has state-of-the-art research facilities and is engaged in a multi-disciplinary approach on various research projects in the field of Anti-Doping science. The research papers are presented in the International and National Conferences and published in peer-reviewed journals.

Ongoing Research Projects

The Laboratory has currently undertaken the following Research Projects on dope science the details of which are as under:-

1. Metabolism Study of Detection and Identification of 7-Ketodehydroepiandrosterone abuse: ***Research Investigators:*** *Mr. Arpit Soni, Mr. Ranjith. B. Lal, (Project ID: NDTL-RP-01: 2020-2021) August 2021.*
2. Urinary Excretion Patterns of Ciclesonide after Different Routes of Administration and Effect on Endogenous Corticosteroids Profile: ***Research Investigators:*** *Mr. Awanish Upadhyay, Dr. Sachin Dubey (Project ID: NDTL-RP-02: 2020-2021) July 2021*
3. Feasibility Study of DBS Cards for Detection of ESAs in Human Blood Specimen: A Comparison to Standard Detection Method: ***Research Investigators:*** *Dr. P. L. Sahu, Dr. Sachin Dubey, Mr. Ranjith B. Lal, Mr. Anand Raj, Mrs. Madhu Joshi (Project ID: NDTL-RP-03: 2020-2021) September 2021.*
4. Correlation Study of Mucaine Gel (Oxethazaine) with respect to Drug of Abuse Mephentermine and Phentermine.: ***Research Investigators:*** *Dr. Sachin Dubey, Mr. Ashok Singh, Mr. Haseen Jamal (Project ID: NDTL-RP-04: 2020-2021) October 2021*
5. Investigation of Triamterene Metabolism: Expanding the Detection Window in Sports dope Testing: ***Research Investigators:*** *Mr. Arpit Soni, Mr. Ranjith. B. Lal (Project ID: NDTL-RP-05: 2020-2021) August 2021*
6. Separation of Salbutamol Enantiomers in Urine Samples by Chiral Gas Chromatography-Mass Spectrometry (GC-MS/MS): ***Research Investigators:*** *Mr. Arpit Soni, Mr. Ranjith. B. Lal (Project ID: NDTL-RP-01: 2021-2022) December 2021*

New Research Proposals

As part of the NDTL's ongoing research activities aimed at promoting research on dope science and to evade doping in sports, a few new research proposals have been taken up by the Laboratory by newly engaged Research Associates as under:-

1. Development and Validation of Endogenous Androgenic Anabolic Steroids in Serum using LC-MS/MS as part of Endocrine Module in Implementation of ABP: ***Research Investigators:*** *Dr. Manish Kumar Sharma, Mr. Ranjith. B. Lal, Dr. P. L. Sahu, (2021-2022)*
2. Development of Analytical Method for Detection and Confirmation of Insulin & its Analogues for Doping control Purpose: ***Research Investigators:*** *Dr. Ankita Srivastava, Dr. Sachin Dubey*
3. Development of Analytical Method for Quantification of Endogenous IGF-1 as part of Endocrine Module of the Athlete Biological Passport (ABP) (2021-2022): ***Research Investigators:*** *Dr. Ankita Srivastava, Dr. Sachin Dubey*
4. Assessment of Urinary Metabolites of Clomiphene Citrate for Evaluating its Significance in Athlete Biological Passport: NDTL in collaboration with PGI, Chandigarh under the guidance of Anti-Doping Laboratory, Cologne (Germany), *(Project ID: NDTL-RP-02) (2021-2022)*

Completed and Presentation of Research Work at International Conference

During 2019-2020, four research projects were approved. Out of these, two projects have been completed and reported during the 1stmeeting of the Scientific Advisory Board (SAB) held in 2021. Dr. Sachin Dubey, Scientist 'C' and his research team also presented a poster on the project entitled "Investigation of Meclofenoxate Metabolism, Profiling of its Degradation Products in Urine and evidence based cut-off for Unambiguous Identification in Human Sports Doping control" in MDI Cologne Workshop 2021 via virtual mode.

Scientific Publications

As per the MoU between NDTL and NIPER-G for synthesis of about 20 Reference Materials in a phased manner, 2 priority compounds namely p-hydroxy prenylamine and nor-ethylmorphine hydrochloride, listed under Phase I, have been successfully synthesized and characterized jointly by the efforts of National Dope Testing Laboratory (NDTL) and National Institute of Pharmaceutical Education and Research Guwahati (NIPER-G), for quality control purposes in dope testing. The Laboratory and NIPER-G put joint efforts to communicate research papers in peer reviewed journal as under:-

1. Athira Joseph, Gangasani Jagadeesh Kumar , Sachin Dattram Pawar, Bhakti Umesh Hirlekar, Prasad V Bharatam, Satyanand Konda, Mohana Krishna Reddy Mudiam, Upadhyayula Suryanarayana Murty, P L Sahu , Sachin Dubey, P Radhakrishnanand, Daya Raju Adye, Roshan M Borkar, Choppari Thirupathi, Pramod Kumar: "Analytical developments of p-hydroxy prenylamine reference material for dope control research: Characterization and purity assessment Drug Test" Anal. 2021 Oct 6. doi: 10.1002/dta.3171.
2. Sachin D Pawar, Gangasani J Kumar, Aruna Chikkondra, Banwari Lal, P Radhakrishnanand, Upadhyayula S Murty, P L Sahu , Sachin Dubey, Arpit Soni, Pramod Kumar. "Synthesis, characterization, method development, and validation of nor-ethylmorphine hydrochloride reference material using established analytical techniques for dope control analysis" Drug Test Anal. 2021 Oct 15. doi: 10.1002/dta.3178.

Installation and Performance Qualification of GC/C/IRMS (253Plus)

NDTL has gradually upgraded its instrument facilities in dealing with the intrinsic technological dialectics that facilitate the speed of analyses and increased sensitivity, specific techniques capable of distinguishing between endogenous and exogenous metabolites for detection of steroidal hormones or their markers in professional sports. On 8th January, 2021, a new Gas Chromatography Combustion Isotope Ratio Mass Spectrometry (GC/C/IRMS) instrument was installed. The Operational & Performance Qualification was checked under monitoring of the Head of the Laboratory and Scientists.

Installation and Performance Qualification of Ultra-weighing balance

To perform an accurate quantitative analysis, weighing is one of the key factors in the detection of substance and validation of the study with accurate and precise results. Keeping in view the importance and requirements of an ultra-weighing balance in the Laboratory, it was installed and its operational qualification was performed on 17thJuly, 2021. The Analysts and Research Associates and Quality Management personnel were trained to perform the accurate weighing of reference standards as well as calibration of weighing assembly on daily basis.

Welcome to new Secretary (Sports)



Dr. P. L. Sahu, Director, NDTL welcoming Mrs. Sujata Chaturvedi, the newly appointed Secretary (Sport) in Shastri Bhawan, New Delhi.

Dr. P.L. Sahu, Director, NDTL extended his warm greetings to Mrs. Sujata Chaturvedi on 5th October, 2021 in Shastri Bhawan, New Delhi on her assuming office of the Secretary (Sports) and cordially invited her to pay a visit to the Laboratory.



The Constitution Day celebrated in Laboratory

The Constitution Day

The Constitution Day, popularly known as Samvidhan Divas or National Law Day, was celebrated in the Laboratory on 26th November, 2021 to commemorate the adoption of the constitution of India. On this day, in 2015, it was declared as the Constitution Day as a part of the celebration of the 125th birth anniversary of Dr. B.R. Ambedkar and to create awareness of the importance of the Indian Constitution in our country. A pledge was taken by all Scientists and Staff of the Laboratory to mark the significance of the constitutional values amongst the citizens of India.

Observance of Vigilance Awareness Week, 2021

The Vigilance Awareness Week was observed in NDTL and during this week, Dr. P.L. Sahu, Director-cum- CEO of NDTL addressed the Scientists and Staff and emphasized the need for participation of one and all in the prevention of, and the fight against corruption. He also encouraged them to raise public awareness regarding the existence, causes and gravity of the threat posed by corruption.

The Swachhta Abiyan

To accelerate the efforts to achieve universal sanitation coverage and to put the focus on sanitation of the Laboratory, a " Swachhta Abhiyan" was observed on the 1st and 4th Wednesday of October, 2021 in the Laboratory. During this period, photographs before and after Swachhta Abhiyan were captured for various Sections.

हिंदी गतिविधियां

राजभाषा हिंदी को बढ़ावा देने के लिए हमारे कार्यालय (राष्ट्रीय डोप परीक्षण प्रयोगशाला) में ज्यादातर अधिकारी और कर्मचारी हिंदी में काम करने का पूर्ण रूप से प्रयास कर रहे हैं जैसे कि हिंदी में नोटिंग, टिप्पणी) उपस्थिति पंजिका में हिंदी में हस्ताक्षर) सभी कार्य नियमित रूप से करने का प्रयास किया जा रहा है। फाइलों के कवर पर द्विभाषी (हिंदी और अंग्रेजी) करने का काम भी किया जा रहा है।

समय–समय पर हिन्दी की बैठकों का आयोजन) हिंदी पखवाड़ा करना उसमें हिंदी निबंध, कविता पाठ और श्रुतलेख आदि का आयोजन किया जाता है। इसके अलावा हिंदी की वर्चुयल बैठकों में अधिकारियों और कर्मचारियों द्व ारा भाग लिया जाता हैं।

कोरोना महामारी को ध्यान में रखते हुए, (उचित दूरी और मास्क पहनकर) हिंदी अधिकारी श्रीमति उषा सक्सेना, द्वारा दिनांक 11/06/2021 को डॉ पी एल साहू की अध्यक्षता में हिंदी बैठक भी की गई जिसमें अधि ाकारियों एवं कर्मचारियों सहित कई लोगों ने हिस्सा लिया। हिंदी पखवाड़ा प्रत्येक वर्ष सितंबर माह को पूरे कार्यालय में हिन्दी भाषा और इसके उपयोग को बढ़ावा देने के लिए मनाया जाता है। इसमें निबंध प्रतियोगिता, श्रुतलेख, काव्यपाठ की निष्पक्ष प्रतियोगिता शामिल है।



Visit of new Secretary (Sports)



Visit of Mrs. Sujata Chaturvedi, Secretary (Sports) to NDTL and inspection of the Dope sample testing in the Laboratory.

On 11th December, 2021, Mrs. Suajata Chaturvedi, the new Secretary (Sports) paid a visit to the laboratory and shared her views with suggestions and feedback to attain excellence in Laboratory activities. She also inspected LC-MS, GC-MS and Biological Sample Processing Section. She suggested to enhance the capability of the Laboratory to meet the future challenges and opportunities. She also interacted with the Director and the entire scientific community of the Laboratory and got feedback on the measures being taken by the Laboratory in so far as WADA observations were concerned. She emphasized the need to put in place all necessary measures for effective implementation of WADA ISLs.



Visit of Mrs. Sujata Chaturvedi, Secretary (Sports) and Shri Siddhartha Singh Longjam, Joint Secretary (Sports) to NDTL.

Celebration of 7th International Day of Yoga

The International Yoga Day is commemorated every year on 21st June 2021. Because of the prevailing Covid-19 pandemic, it was advised to perform yoga activities at home and share pictures of individuals. This activity was encouraged and appreciated by the Laboratory Director. The idea was conceived by our Hon'ble Prime Minister, Mr. Narendra Modi who proposed the concept during his speech at the UN General Assembly. Online sessions on the slogan "Let's make your habit for Yoga and Make Country Healthy" was held for the NDTL Staff during June 19-21, 2021. A total of 40 members including the Director, Scientists, Research Associates, and staff members of the Laboratory participated and celebrated International Yoga Day via virtual mode for spreading the message to keep 'Fit' and 'Good Health' of the nation.



NDTL celebrated 7thInternational Day of Yoga via virtual mode



Visit of Dean, Research & Development, SGT University, Gurgaon, (Haryana), and Research Scholars for interaction with Scientists

Visit of Research Expert from Shree Guru Gobind Singh Tricentenary University (SGT) to NDTL

NDTL is exploring possibilities of signing MoUs with other organizations like the National Institutes of Research & Forensic Laboratories in the country for mutual benefits in terms of creating a talent pool in the country in the Anti-Doping field. On 26th February, 2021, Dr. M.S. Sidhu, Dean, Research & Development, SGT University, Gurgaon, (Haryana), and Research Scholars of this University visited NDTL.

The Researchers and Laboratory Scientists envisaged sharing the knowledge between the University and Laboratory in the specified areas which would immensely help to facilitate the research in human sports but also contribute to the cause of Anti-Doping science to a great extent. The collaborative research activities engaging Ph.D. and Medicine students between the two institutions will eventually lead to the excellent research and award of their respective degrees.



Visit of Officials of SGT University to NDTL

ICMR Expert Group Visit

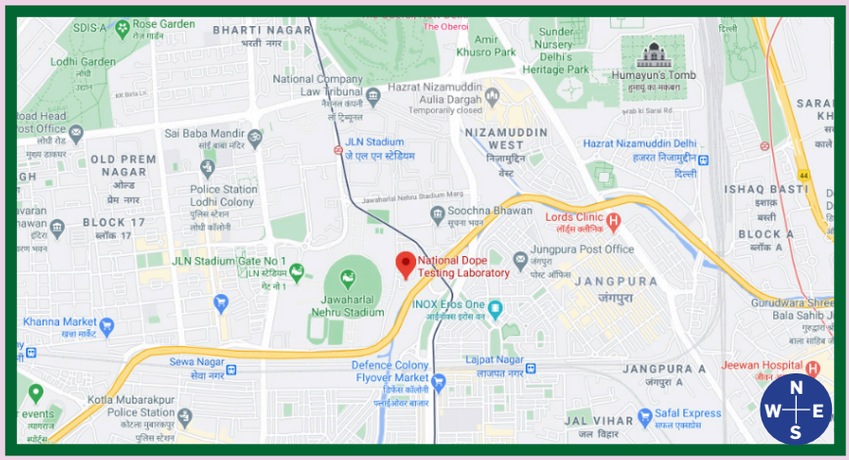
An Expert Group from ICMR visited NDTL on 1st Feb 2021 for review of Audit Reports, SOPs, and the independence of the Laboratory activities. The Group also reviewed the measures required to be taken by the Laboratory in so far as WADA observations were concerned and recommended measures to be put in place for their effective implementations.

The said Group had, in their recommendation to the Government of India, suggested measures for enhancing the capability of the Laboratory to meet the challenges and opportunities in the coming years.

Participation of NDTL in EQAS

WADA's External Quality Assessment Scheme (EQAS) allows evaluation of Laboratory competency through a continuous assessment of their performance and provides Laboratories with opportunities to compare their results, intending to enhance harmonization of test results among WADA accredited Laboratories. The Laboratory is actively participating in various EQAS Schemes like the World Anti-Doping Agency External Quality Assurance Scheme (WADA EQAS), World Association of Anti-Doping Scientists (WAADS), Quality Control Centre Switzerland (CSCQ).

The Laboratory received urine samples as a part of the WADA EQAS Programme 1st round, 2nd round and 3rd round, i.e., WADA 2021 *EQAS-01,02 & 03 in January, 2021, July, 2021, and October, 2021 respectively. Furthermore, a total number of 10 samples for specific WADA EQAS were received in May, 2021 for readiness to resume anti-doping testing. This Laboratory also received blood samples as part of CSCQ every month for quality assessment and performance capacity. These samples were tested in the initial testing process followed by confirmatory analysis. The results were reported as the expectancy of the WADA EQAS program and found to be satisfactory.*



सत्यमेव जयते

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