



Three-day Symposium on

# TOWARDS END TB: ACHIEVEMENTS, CHALLENGES AND FUTURE DIRECTIONS

**DATE: 23<sup>rd</sup> - 25<sup>th</sup> March 2023**

**THEMES: SHORTENING TB THERAPY**

**Key Sessions on**

- ◆ Current Status & Challenges
- ◆ Novel Diagnostics & Therapeutics Strategies
- ◆ Clinical Perspective of TB Research
- ◆ Host-Pathogen Interaction
- ◆ Landscape of new TB Vaccines

**VENUE:  
THSTI, Faridabad**

## KEYNOTE SPEAKERS

**Dr. Rajesh Gokhale**, Secretary, Department of Biotechnology, GOI  
**Dr. Soumya Swaminathan**, Chairperson, MSSRF  
**Dr. T.S. Balganesh**, President, Gangagen Biotechnologies Pvt Ltd, Bengaluru  
**Dr. Anil Koul**, Vice President, Johnson & Johnson, Belgium; The London School of Hygiene & Tropical Medicine (LSHTM)  
**Dr. Adrie Steyn**, UAB/K-RITH, USA  
**Dr. William Ramses Bishai**, Johns Hopkins University, USA  
**Dr. Gursaran Pran Talwar**, Talwar Research Foundation, Delhi

## SPEAKERS

**Dr. Amit Misra**, CDRI, Lucknow  
**Dr. Amit Kumar Pandey**, THSTI, Faridabad  
**Dr. Amit Singh**, IISc, Bengaluru  
**Dr. Anant Mohan**, AIIMS, Delhi  
**Dr. Ashwani Kumar**, CSIR-IMTECH, Chandigarh  
**Dr. Avinash Bajaj**, RCB, Faridabad  
**Dr. B. Gopal**, IISc, Bengaluru  
**Dr. Bichitra Biswal**, NII, Delhi  
**Dr. Camilla Rodrigues**, Hinduja Hospital, Mumbai  
**Dr. Carlos Martin**, Universidad de Zaragoza, Spain  
**Dr. Deepak Kaushal**, Texas Biomedical Research Institute, USA  
**Dr. Deepak Saini**, IISc, Bengaluru  
**Dr. Dhananjay Bakhle**, Lupin India  
**Dr. Dhiraj Kumar**, ICGEB, Delhi  
**Dr. Dinesh Mahajan**, THSTI, Faridabad  
**Dr. Dirk Schnappinger**, Weill Cornell Medical College, USA  
**Dr. Gobardhan Das**, JNU, Delhi  
**Dr. Harinath Chakrapani**, IISER Pune  
**Dr. Karan Madan**, AIIMS, Delhi  
**Dr. Krishan Gopal**, CSIR-IMTECH, Chandigarh  
**Dr. Krishnamohan Atmakuri**, THSTI, Faridabad  
**Dr. Mandira Varma Basil**, Patel Chest Hospital, Delhi  
**Dr. Nisheeth Agarwal**, THSTI, Faridabad  
**Dr. R.K. Shandil**, FNDR, Bengaluru  
**Dr. Raghunand Tirumalai**, CSIR-CCMB, Hyderabad  
**Dr. Ramandeep Singh**, THSTI, Faridabad  
**Dr. Randeep Guleria**, Medanta Hospital, Gurugram  
**Dr. Ranjan Nanda**, ICGEB, Delhi  
**Dr. Sarman Singh**, AIIMS, Bhopal  
**Dr. Sheetal Gandotra**, CSIR-IGIB, Delhi  
**Dr. Smriti Mehra**, Texas Biomedical Research Institute, USA  
**Dr. Sonali Sarkar**, JIPMER, Puducherry  
**Dr. Tarun Kumar Sharma**, GBU, Gandhinagar  
**Dr. Varadharajan Sundaramurthy**, NCBS, Bengaluru  
**Dr. Ved Prakash Dwivedi**, ICGEB, Delhi  
**Dr. Vidya Mave**, BJGMC, Pune  
**Dr. Vijaya Lakshmi Valluri**, BMMRC, Hyderabad  
**Dr. Vinay Nandicoori**, CSIR-CCMB, Hyderabad  
**Dr. Vivek Rao**, IGIB, New Delhi

## SESSION CHAIRS

**Dr. Anil Tyagi**, Delhi University, Delhi  
**Dr. Avadhesha Suroliya**, IISc, Bengaluru  
**Dr. Debasisa Mohanty**, NII, Delhi  
**Dr. Jaya Tyagi**, AIIMS, Delhi  
**Dr. Kithiganahalli Narayanaswamy Balaji**, IISc, Bengaluru  
**Dr. Pramod Garg**, THSTI, Faridabad  
**Dr. Sandhya Vishweshwaraiah**, IISc, Bengaluru  
**Dr. Seyed Hasnain**, Sharda University, Noida  
**Dr. Shekhar Mande**, Savitribai Phule Pune University, Pune  
**Dr. Shinjini Bhatnagar**, THSTI, Faridabad  
**Dr. Sudhanshu Vratil**, RCB, Faridabad  
**Dr. Umesh Varshney**, IISc, Bengaluru  
**Dr. Valakunja Nagaraja**, IISc, Bengaluru  
**Dr. Vishwa Mohan Katoch**, JIPMER, Puducherry

## SCIENTIFIC COMMITTEE

**Dr. Nisheeth Agarwal**, THSTI; **Dr. Ramandeep Singh**, THSTI;  
**Dr. Krishnamohan Atmakuri**, THSTI; **Dr. Amit Pandey**, THSTI;  
**Dr. Dinesh Mahajan**, THSTI; **Dr. Dhiraj Kumar**, ICGEB;  
**Dr. Bichitra Biswal**, NII

Last date to register is  
12th March 2023.

scan to  
register



Register using the link below  
<https://thsti.in/tbconf/>

☎ 0129-2876300/299 ✉ TBconf2023@thsti.res.in

**Translational Health Science & Technology Institute (THSTI)**

(An autonomous Institute of Department of Biotechnology, Ministry of Science & Technology, Government of India),  
NCR Biotech Science Cluster, 3rd Milestone, Gurgaon- Faridabad Expressway, Faridabad, Haryana, India 121001

/THSTIFaridabad

/Translational Health Science and Technology Institute



# Translational Health Science and Technology Institute

NCR Biotech Science Cluster, Faridabad

## Three-day Symposium

On

**TOWARDS END TB: ACHIEVEMENTS, CHALLENGES AND FUTURE DIRECTIONS**

23<sup>rd</sup> – 25<sup>th</sup> March, 2023

Venue: **M. K. Bhan Auditorium**

### Program Schedule

23 <sup>rd</sup> March 2023, Day 1	
10:00 - 12:30	<b>Registration</b>
12:30 - 13:45	<b>Lunch</b>
13:45-13:55	Performance by Students: <i>“Nishchay Se Nikshay”</i>
14:00 - 14:15	Welcome Address: <b>Dr. Pramod K. Garg</b> , Executive Director, THSTI, Faridabad
14:15 - 14:45	Keynote Lecture: <b>Dr. Soumya Swaminathan</b> , Chairperson, MSSRF, Chennai
<b>14:45 - 16:25</b> (80 min +20 min for Q&A)	<b>Session 1: TB Clinical Research</b> <b>Chair:</b> Dr. Pramod K. Garg, THSTI, Faridabad Dr. Sarman Singh, IISER, Bhopal Dr. Soumya Swaminathan, Chairperson, MSSRF, Chennai
	<b>Dr. Camilla Rodrigues</b> , P. D. Hinduja Hospital, Mumbai Title: <i>“How close are we to sequencing MTB in routine diagnostics today?”</i>
	<b>Dr. Anant Mohan</b> , AIIMS, Delhi Title: <i>“Advances in anti-tubercular therapy: New drugs and newer regimens”</i>
	<b>Dr. Karan Madan</b> , AIIMS, Delhi Title: <i>“Mediastinal lymph node tuberculosis: Diagnostic and clinical challenges”</i>
	<b>Dr. Seyed E. Hasnain</b> , Sharda University, Greater Noida

	Title: “Demistifying the PE/PPE/PE_PGRS protein families present exclusively in Mycobacteria”
<b>16:30 - 17:00</b>	Keynote Lecture: <b>Dr. Rajesh S. Gokhale</b> , Secretary, Department of Biotechnology, Government of India Title: “Nutrition economics of Tuberculosis”
<b>17:00 - 17:30</b>	<b>Tea Break</b>
<b>17:30 - 18:00</b>	Keynote Lecture: <b>Dr. Anil Koul</b> , Johnson and Johnson, Belgium Title: “Discovery of Bedaquiline and aspirations for shorter new pan TB drug regimens”
<b>18:00 - 20:00</b> (95 min + 25 min for Q&A)	<b>Session 2: TB Clinical Research (Continued)</b> <b>Chair:</b> Dr. Shinjini Bhatnagar, THSTI, Faridabad Dr. Anil Koul, Johnson and Johnson, Belgium
	<b>Dr. Sarman Singh</b> , IISER, Bhopal Title: “Beijing strains of <i>M. tuberculosis</i> are major drivers of the multidrug and extensively drug resistance in Northeastern India”
	<b>Dr. Subash Babu</b> , NIH-ICER, Chennai Title: “Identifying host biomarkers to aid in the diagnosis of pediatric tuberculosis”
	<b>Dr. Vijaya Lakshmi Valluri</b> , BMMRC, Hyderabad Title: “Immunity, risk factors & biomarkers for TB in children & adolescents”
	<b>Dr. Amit Misra</b> , CDRI, Lucknow Title: “Orally-inhaled dry powders for treatment of TB: Centinhale, second-line drugs and host-directed therapies”
	<b>Dr. Tamsin Eades</b> , Illumina AMEA. Title: “Role of NGS to gain insights into <i>Mtb</i> Biology, Epidemiology and Resistance profiling”
<b>20:00 onwards</b>	<b>Dinner</b>
<b>24<sup>th</sup> March 2023, Day 2</b>	
<b>07:30 - 09:00</b>	<b>Registration and Breakfast</b>
<b>09:00 - 09:30</b>	Keynote Lecture: <b>Dr. Andries JC Steyn</b> , AHRI, SA & UAB, Birmingham, USA Title: “Studying human tuberculosis lesions across the spectrum of infection and disease: implications for drug and vaccine discovery”
<b>09:30 - 11:35</b> (100 min + 25min for Q&A)	<b>Session 3: Basic Biology of TB Pathogen</b> <b>Chair:</b> Dr. Anil Tyagi, Delhi University, Delhi Dr. Valakunja Nagaraja, Indian Institute of Science, Bengaluru
	<b>Dr. B. Gopal</b> , IISc, Bengaluru Title: “Gene Expression in <i>Mycobacterium tuberculosis</i> ”
	<b>Dr. Smriti Mehra</b> , Texas Biomedical Research Institute, USA Title: “Indoleamine dioxygenase pathway promotes TB disease in monkey and murine lungs”

	<p><b>Dr. Ashwani Kumar</b>, CSIR-IMTECH, Chandigarh Title: <i>“Regulation of subcellular localization of Mycobacterium tuberculosis inside the macrophage is key to its intracellular survival”</i></p> <p><b>Dr. Krishnamohan Atmakuri</b>, THSTI, Faridabad Title: <i>“HupB, a nucleoid-associated protein, is critical for the survival of Mycobacterium tuberculosis under host-mediated stresses and for enhanced tolerance to key first-line antibiotics”</i></p> <p><b>Dr. Raghunand R. Tirumalai</b>, CSIR-CCMB, Hyderabad Title: <i>“Host membrane associated factors and mycobacterial entry”</i></p>
<p><b>11:40 - 13:45</b> (100 min + 25 min for Q&amp;A)</p>	<p><b>Session 4: Basic Biology of TB Pathogen (continued)</b> <b>Chair:</b> Dr. Umesh Varshney, Indian Institute of Science, Bengaluru Dr. Avadhesh Surolia, Indian Institute of Science, Bengaluru</p>
	<p><b>Dr. Amit Singh</b>, IISc, Bengaluru Title: <i>“S-adenosylmethionine mediated regulation of transsulfuration pathway modulates redox capacity of Mycobacterium tuberculosis”</i></p>
	<p><b>Dr. Amit Kumar Pandey</b>, THSTI, Faridabad Title: <i>“Targeting “adaptability”: Exploring novel therapeutic opportunities and strategies to shorten the current regimen”</i></p>
	<p><b>Dr. Gobardhan Das</b>, JNU, Delhi Title: <i>“Tuberculosis: An ancient disease with modern outlook”</i></p>
	<p><b>Dr. Nisheeth Agarwal</b>, THSTI, Faridabad Title: <i>“Post-antibiotic effect in Mycobacterium tuberculosis: Deciphering the role of a novel transcriptional regulator”</i></p>
	<p><b>Dr. Deepak K. Saini</b>, IISc, Bengaluru Title: <i>“Culture-independent identification of pathogens and their viability assessment using Raman microspectroscopy and deep-learning”</i></p>
	<p><b>13:50 - 14:50</b></p>
<p><b>14:50 - 16:30</b> (80 min + 20 min for Q&amp;A)</p>	<p><b>Session 5: TB Diagnostics</b> <b>Chair:</b> Dr. Jaya Tyagi, All India Institute of Medical Sciences, Delhi Dr. Sandhya S. Visweswariah, Indian Institute of Science, Bengaluru</p>
	<p><b>Dr. Sonali Sarkar</b>, JIPMER, Puducherry Title: <i>“TB Diagnosis – present status and challenges”</i></p>
	<p><b>Dr. Tarun K. Sharma</b>, GBU, Gandhinagar Title: <i>“Harnessing aptamer technology for the detection of TB”</i></p>
	<p><b>Dr. Avinash Bajaj</b>, RCB, Faridabad Title: <i>“Membrane-specific probe can detect mycobacteria in human gastrointestinal tissues”</i></p>
	<p><b>Dr. Ranjan Nanda</b>, ICGEB, Delhi Title: <i>“Pharmacogenomics in tuberculosis: A neglected aspect.”</i></p>
<p><b>16:30 - 17:30</b></p>	<p><b>Tea &amp; Poster Exhibits-1</b></p>
<p><b>17:30 - 18:00</b></p>	<p>Keynote Lecture: <b>Dr. Gursaran Pran Talwar</b>, Talwar Research Foundation, Delhi</p>

	Title: “ <i>Marvellous properties of Mycobacterium indicus pranii (MIP) for treatment of category II ‘Difficult to Treat’ Tuberculosis</i> ”
<b>18:00 - 18:50</b> (40 min + 10 min for Q&A)	<b>Session 6: Landscape of New TB Vaccines</b> <b>Online presentations</b> <b>Chairs:</b> Dr. Andries JC Steyn, AHRI, SA & UAB, Birmingham, USA Dr. Seyed Ehtesham Hasnain, National Science Chair at IIT-Delhi & Sharda University, Greater Noida <b>Dr. Carlos Martín Montañes</b> , Universidad de Zaragoza, Spain Title: “ <i>MTBVAC, a new TB vaccine moving to efficacy trials 100 years after BCG</i> ” <b>Dr. Dirk Schnappinger</b> , Weill Cornell Medicine, Cornell University, USA Title: “ <i>Facilitating (TB) Drug Development in Academia - Challenges and Opportunities</i> ”
	<b>Chairs:</b> Dr. Sudhanshu Vрати, Regional Center for Biotechnology, Faridabad Dr. Gursaran Pran Talwar, Talwar Research Foundation, Delhi <b>Dr. Vidya Mave</b> , BJGMC, Pune Title: “ <i>Overview of the therapeutic TB vaccine landscape</i> ” <b>Dr. Dhananjay Kapse</b> , Serum Institute of India, Pune Title: “ <i>Global TB eradication: Disease burden reduction and elimination strategy</i> ” <b>Dr. Deepak Kaushal</b> , Texas Biomedical Research Institute, USA Title: “ <i>Prevention of tuberculosis in a second species of nonhuman primates by an attenuated, stress-response deficient mutant of Mycobacterium tuberculosis: Correlates of protection</i> ”
	<b>20:15 onwards</b> <b>Cultural event &amp; Dinner</b>
<b>25<sup>th</sup> March 2023, Day 3</b>	
<b>07.30 - 09.00</b>	<b>Breakfast</b>
<b>09:00 - 09:30</b>	Keynote Lecture: <b>Dr. T. S. Balganes</b> , Gangagen Biotechnologies Pvt. Ltd., Bengaluru Title: “ <i>Thirty years of TB drug discovery: What have we learnt?</i> ”
<b>09:30 - 11:35</b> (100 min + 25 min for Q&A)	<b>Session 7: TB Drug Discovery &amp; Development</b> <b>Chair:</b> Dr. William R. Bishai, Johns Hopkins University, USA Dr. B. Gopal, Indian Institute of Science, Bengaluru <b>Dr. Vinay K. Nandicoori</b> , CSIR-CCMB, Hyderabad Title: “ <i>Evolution of drug resistance in Mycobacterium tuberculosis</i> ” <b>Dr. Dhananjay Bakhle</b> , Lupin Pharmaceutical Inc., Pune, India Title: “ <i>Repositioning anti-TB drugs to seek new horizons</i> ” <b>Dr. Ramandeep Singh</b> , THSTI, Faridabad Title: “ <i>Inorganic Polyphosphate, a master regulator of mycobacterial pathogenesis</i> ” <b>Dr. Bichitra K. Biswal</b> , NII, Delhi Title: “ <i>Designing new anti-TB molecules through structure-guided approach</i> ”

	<b>Dr. Krishan Gopal Thakur, CSIR-IMTECH, Chandigarh</b> Title: <i>“Investigating novel Toxin-Antitoxin systems, the molecular breaks, in Mycobacterium tuberculosis”</i>
<b>11:40 - 13:45</b> (100 min + 25 min for Q&A)	<b>Session 8: TB Drug Discovery &amp; Development (continued)</b> <b>Chair:</b> Dr. Debasisa Mohanty, National Institute of Immunology, Delhi Dr. Vinay K. Nandicoori, CSIR-Centre For Cellular And Molecular Biology, Hyderabad
	<b>Dr. R. K. Shandil</b> , FNDR, Bengaluru Title: <i>“Challenges in TB drug discovery and development- An industry perspective”</i>
	<b>Dr. Mandira Varma Basil</b> , Vallabhbhai Patel Chest Institute, Delhi Title: <i>“Unboxing the role of efflux pumps in drug resistance in M. tuberculosis”</i>
	<b>Dr. Vivek Rao</b> , CSIR-IGIB, Delhi Title: <i>“Sertraline effectively improves TB therapy in preclinical models of infection”</i>
	<b>Dr. Dinesh Mahajan</b> , THSTI, Faridabad Title: <i>“Efforts on new drug discovery against tuberculosis infection”</i>
	<b>Dr. Harinath Chakrapani</b> , IISER, Pune Title: <i>“Potentiation of Moxifloxacin Against non-replicating drug-tolerant Mycobacterium tuberculosis through a Prodrug”</i>
<b>13:45 - 15:45</b>	<b>Lunch &amp; Poster Exhibits-2</b>
<b>15:50 - 16:20</b>	Keynote Lecture: <b>William R. Bishai</b> , John Hopkins University, USA Title: <i>“Glutamine in the granuloma: Reversing an immunometabolic Mtb virulence mechanism with a novel host-directed therapy”</i>
<b>16:20 - 18:00</b> (80 min + 20 min for Q&A)	<b>Session 9: Host-pathogen interaction</b> <b>Chair:</b> Dr. Kithiganahalli Narayanaswamy Balaji, Indian Institute of Science, Bengaluru, Dr. Deepak Kaushal, Texas Biomedical Research Institute, USA
	<b>Dr. Dhiraj Kumar</b> , ICGEB, Delhi Title: <i>“Stitching together an abode for its survival by Mycobacterium tuberculosis”</i>
	<b>Dr. Sheetal Gandotra</b> , CSIR-IGIB, Delhi Title: <i>“Lipid droplets and the immune response to Tuberculosis”</i>
	<b>Dr. Varadharajan Sundaramurthy</b> , NCBS, Bengaluru Title: <i>“Modulation of Mtb physiological states in vivo”</i>
	<b>Dr. Ved Prakash Dwivedi</b> , ICGEB, Delhi Title: <i>“Governing NOTCH3/AKT signaling enriches lung-resident memory T cells during tuberculosis”</i>
<b>18:00 - 18:20</b>	Concluding remarks and Prize distribution
<b>18:20 - 18:30</b>	Vote of Thanks
<b>18:30 onwards</b>	<b>Tea and Departure</b>

*Note: Duration of each presentation is 20 minutes. Additional time is allocated for Q&A at the end of the each session.*