



**A Report
on
Webinar Series**



Technocrats Meet Researchers

ON

"3D Imaging Ultra microscope for Tissue and small animals"

by

Miltenyi Biotec

July 22, 2022 (Saturday), 12:00 pm

Organized by

Society for Radiation Research (SRR)

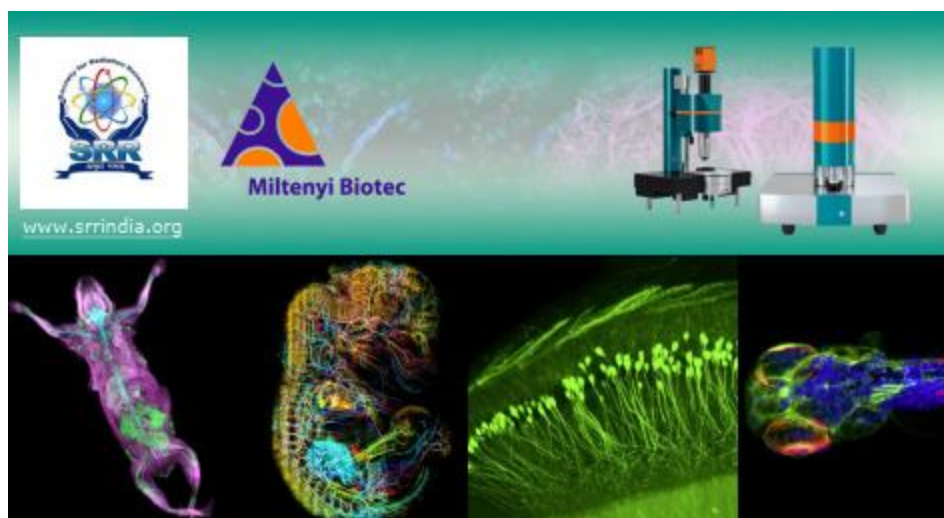
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The Society for Radiation Research (SRR) organizes the Webinar-Cum-Demonstration Series:

Technocrats Meet Researchers and Clinicians

Sat, July 22, 2023, 12 PM

Abstract

Biological tissues are remarkably complex. A complete understanding of biological mechanisms in health and disease requires an unbiased exploration of the whole organism.

This webinar will discuss how whole tissue 3D imaging can enable researchers to advance their research in various fields and share our solutions to get started immediately. A live demo with the Ultramicroscope Blaze will show how easy it see the big picture and dive into the details.

Speaker



Advont Chua, PhD

Regional Product Marketing
Manager
Miltenyi Biotec

Advont completed his PhD under the Interdisciplinary Graduate Programme at Nanyang Technological University in 2018. He joined Miltenyi Biotec as a Product and Technical Application Specialist in 2019, specialising in advanced microscopy, tissue dissociation and culture, cell separation, flow cytometry, and various immunochemical techniques. Currently, he is the Regional Product Marketing Manager.

AGENDA

12:00pm Applications of large-scale 3D imaging

12:30pm Live demo

13:00pm Q&A

Please scan the QR code
or click the link button
below to register:

[Register Now](#)

SRR has initiated a series of Webinar/Online presentation-cum-demonstration named "**Technocrats Meets Researchers**" for SRR members. In this event, a company would arrange a webinar on a specific technique with wider interest to SRR members and would financially support SRR.

In this series, the first online presentation-cum-demonstration of "**3D Imaging ultra microscope for tissue and small animals**" suitable for tumor biology, drug delivery and other research applications was organized by Miltenyi Biotec on July 22, 2023 (Sat) at 12 pm. Many eminent scientists, clinicians and students attended the webinar. The

presentation was followed by demonstration and application of imaging system. Dr Advont Chua, Regional Product Marketing Manager, Miltenyi Biotec delivered the webinar where the different whole body and tissue applications especially related to immune traffic, oncology was explained.

The session was very interactive with many questions and queries which were discussed during webinar. Dr K. P. Mishra, Founder President, SRR suggested to use the technique for brain development. Dr J P Agarwal, TMH, Mumbai asked for oncological application of techniques. Dr Samarth, Bhopal Memorial Hospital & Research Centre, Bhopal suggested to make arrangements for demonstration in different Institutes. Clinicians felt that system could be very useful in oncology.

Recording and transcription For now, meeting transcripts are only available to select Teams users. [Privacy policy](#) Dismiss

Neuroscience

Whole mouse: Immune trafficking, Nerve development/degeneration

Panoptic imaging of transparent mice reveals whole-body neuronal projections and skull-meninges connections

Applications:

- Immune trafficking
- Nerve development/degeneration

Skull meninges connections Immune trafficking in MCAO

invisible mouse Light-sheet 3D reconstruction

ventral view BL6 merge LysM GFP+ PI

merge LysM GFP+ PI merge LysM GFP+ PI

Ukiso PC Mic and Speakers Take control of the presentation

Cai et al. 2019 Nat. NeuroSci (vDISCO)

22.07.2023 Advont // Applications of large-scale 3D imaging with Ultramicroscope

Jia Wang Chua

40:24 Chat People Raise React View More Camera Mic Share Leave

Oncology

Whole Mouse: Assessment metastases and therapeutic antibodies

Cell

Volume 175, Issue 5, 12 December 2019, Pages 1460-1474.e1

Deep Learning Reveals Cancer Metastasis and Therapeutic Antibody Targeting in the Entire Body

Applications:

- Assessment of tumor environment
- Assessment of cancer metastasis and therapeutic antibodies

mouse with tumor burden Light-sheet microscopy Deep learning reconstruction Detection of all micrometastases

Step 1: vDISCO clearing & imaging Step 2: Deep learning-enabled segmentation and analysis

Analysing effectiveness of antibody targeting

- DeepMACT showed that the majority of the micrometastases had size of 75µm or smaller, which could not be detected by other whole-body imaging methods
- DeepMACT revealed that antibody-based therapeutics can miss as many as 23% of the micrometastases
- We found that tumor microenvironment is critical for the efficacy of antibody drug targeting

Pan et al. 2019 Cell (vDISCO)

Jia Wang Chua

Faruq Bagwan

1/12

EP

Neuroscience

Whole mouse: Immune trafficking, Nerve development/degeneration



Panoptic imaging of transparent mice reveals whole-body neuronal projections and skull-meninges connections

Ruiyao Cai, Chenchen Pan, Alireza Ghasemigharagoz, Mihail Ivulinov Todorov, Benjamin Förstner, Shan Zhao, Harsharan S. Bhatia, Amalido Parra-Damas, Leander Miowska, Delphine Thevenaz, Markus Rempfler, Anna L. R. Xavier, Benjamin T. Kress, Corinne Benakis, Hanno Steinke, Sabine Liebscher, Ingo Bechmann, Arthur Liesz, Bjoern Menze, Martin Kerschensteiner, Malen Nedergaard & Ali Ertürk

Applications:

- Immune trafficking
- Nerve development/degeneration

