

AC41 HIV Host-virus interactions

Work In Progress (WIP) meeting
25th of March 2025

Amphithéâtre Duclaux - Institut Pasteur, Paris
Program

9h00 OPENING COFFEE

9h20-9h30 **Introduction:** *Michaela Müller-Trutwin (Chair of the AC41)*

Session 1 – Keynote lecture

Chair: Constance Delaugerre

9h30-10h00 **Pierre Gantner** (*Laboratoire de Virologie, INSERM, CHU de Strasbourg*)
Lenacapavir Directs Specific Proteasome-Mediated Degradation of Gag Proteins in HIV- Infected Cells

Session 2 – Immune Responses, disease outcomes and Immunotherapy

Chairs: Elisabeth Menu & Xavier Lahaye

10h00-10h15 **Antoine Gross** (*IRIM UMR9004, Montpellier*)
NK cells in Immunological Non-Responders

10h15-10h30 **Rachelle Saleh** (*NeuroDiderot, INSERM, Paris*)
Variability in immunometabolic signatures among HIV patients defines Immune outcomes and progression

10h30-10h45 **Marion Camard** (*CEA, Inserm, IDMIT, Le Kremlin Bicêtre & Fontenay aux Roses*)
Modulation of TLR-Driven Monocyte Activation by JAK-STAT Inhibitors in HIV-Infected Patients

10h45-11h10 **Flash Talks (8)**

- Felipe Leon-Diaz; Mariem Znaidia; Mona Meyer; Laetitia Gay
- Coline Seurre; Yuxin Song; Merlin Després ; Selen Ay

11h10-11h40 BREAK

Session 3 – Viral Immune Evasion and Resistance Mechanisms

Chairs: Stéphane Frémont & Lucile Espert

11h40- 11h55 **Jason Decotter** (*CNRS UPR9002, IBMC, Université de Strasbourg*)
Deciphering the RNA interactome of the HIV-1 Vif protein and its impact on viral replication

11h55-12h10 **Chiara Tomasini** (*Institut Pasteur, Paris*)
Deciphering the biogenesis of HIV-induced CPSF6 puncta

12h10-12h25 **Vasco Rodrigues** (*Institut Curie, Paris*)
Direct binding of Gag to GAS7 allows efficient replication of HIV-1 in macrophages

12h25-12h50 **Flash Talks (8)**

- Anaël Hanouna ; Amelia Aeschelmann; Juliette Desforges; Mathieu Long

- Yury Zgadzay; Michel Autin ; Hugo Génin; Titouan Robin

12h50 – 14h45

Lunch + Posters at the Modules

Session 4 – Evolution and Genetics of HIV and of the primate hosts

Chairs: Clarisse Berlioz-Torrent & Jean-Christophe Paillart

- 14h45- 15h00** **Matthieu Maisch** (*Cnrs Inserm, Institut Cochin, the Dynavir Network, Paris*)
HIV-1 Pre-integrative latency: Study of the integration potential and localization of HIV-1 stabilized Unintegrated Linear DNA
- 15h00-15h15** **Cyprien Jahan** (*Institut de Génétique Humaine, CNRS, Montpellier*)
Repressive chromatin structure of unintegrated HIV-1 DNA allows virus escape from cGAS activation
- 15h15- 15h30** **Dorine Martres** (*Institute for Infectious and Inflammatory Diseases, INSERM, CNRS, Toulouse*)
Genetic and functional properties of CXCR4-using HIV-1 envelope glycoproteins in recently infected people
- 15h30-15h45** **Rémi Demeure** (*CIRI, InsermU1111, UCBL1, CNRS, Lyon*)
Evolutionary and functional characterization of primate SAMD9/9L through coevolution with lentiviruses

Session 5 – B cell targeting and vaccine research

Chairs: Delphine Planas & Christiane Moog

- 15h45-16h00** **Sylvain Cardinaud** (*VRI, Inserm U955, Team 16, Paris*)
Targeting Langerhans cells using trimeric Env of HIV triggers a swift and robust production of Env-specific IgG antibodies and neutralizing antibodies through a Tfh/germinal center (GC) reaction
- 16h00-16h30** **BREAK**
- 16h30-16h45** **Nicolas Ellinger** (*IBCP, UMR 5305, CNRS, Lyon*)
Development of an mRNA vaccine against HIV-1 based on an acute infection Envelope gene obtained from a heterozygous CCR5 Δ32 deletion
- 16h45-17h00** **Fanette Séité** (*Institute for Integrative Biology of the Cell, CNRS, CEA, Paris*)
High affinity HIV-specific BCRs allow capture, processing, and presentation of HIV particles by B cells, leading to potent HIV-specific CD4+ T cell activation

Dominique Dormont PhD awards (ANRS MIE and SFV)

Chair: Anne-Sophie Beignon

- 17h00-17h10** **Presentation of the awards by Françoise BARRÉ-SINOUSI**
- 17h10-17h25** **Alexandre Legrand** (*U1111, CIRI, ENS de Lyon*)
Caractérisation évolutive et fonctionnelle des protéines de l'immunité innée SAMD9/SAMD9L et de leur implication dans l'infection par le VIH
- 17h25-17h40** **Diana Brychka** (*IRIM, CNRS, Montpellier*)
Mechanistic insights on monocyte infiltration to the brain: focus on transmigration and HIV-1 neuroinvasion
- 17h40** **End of the meeting**
- 17h45-19h00** **Wine and cheese**

Scientific and Organizing Committee

AC41 Office: Victor Appay; Anne-Sophie Beignon; Philippe Benaroch, Stéphane Emiliani; Real Fernando; Michaela Müller-Trutwin (chair).

ANRS MIE Basic Research Department Guia Carrara and Dahlia Chebbah

Institut Pasteur: Nathalie Alazard

10h45-11h10

- **Felipe Leon-Diaz** (*Université Paris Cité, Institut Cochin*)
Cellular RNA Transcription and Alternative Splicing Modulation During HIV productive and Latent Infection
- **Mariem Znaidia** (*Unité Virus et Immunité – Institut Pasteur, Paris*)
What if bacteria could reactivate latency?
- **Mona Meyer** (*Institut Cochin, Paris*)
Unraveling HIV-1 Transcriptome Regulation with Long-Read Sequencing: Tat's Role in Viral Transcriptome Beyond Transactivation
- **Laetitia Gay** (*INSERM, EFS; CHU Montpellier, Montpellier France*)
Altered expression of GDF-15 among HIV-exposed uninfected children with mitochondrial deficiencies
- **Coline Seurre** (*INSERM, PaThLiv, Université Claude Bernard Lyon 1*)
Unveiling the antiviral activity of the heparanase-1 inhibitor PI-88 against HIV-1: a new therapeutic avenue
- **Yuxin Song** (*CIRI, Lyon*)
Study of the interaction between two antiviral membrane fusion inhibitors: IFITM3 and CH25h
- **Merlin Després** (*Institut Pasteur, Paris*)
Blocking HIV spread and associated inflammation by targeting Sec61
- **Selen Ay** (*Institut Pasteur, Paris*)
In Vivo HIV-1 nuclear condensates safeguard against cGAS and license reverse transcription

12h25-12h50

- **Anaël Hanouna** (*Institut Curie, Paris*)
HIV-1 evolved to escape GAS7-dependent viral restriction
- **Amelia Aeschelmann** (*IBMC – CNRS – Université de Strasbourg*)
Effects of the mutations in the multimerization domain of Gag: another keystone in the saga of HIV-1 infection?
- **Juliette Desforges** (*Institut Cochin, Paris*)
Exploring the role of hnRNPC and its partners in HIV-1 replication
- **Mathieu Long** (*BMC – CNRS – Université de Strasbourg*)
Structural Study of the HIV-1 Gag – Psi RNA Complex
- **Yury Zgadzay** (*INSERM, CNRS, Strasbourg*)
Structural and functional study of the HIV-1 intasome/chromatin complex
- **Michel Autin** (*MFP, CNRS, University of Bordeaux*)
Role of TAR RNA in the integrase post-integration disassembly
- **Hugo Génin** (*Institut Cochin, Paris*)
Mucosal anti-HIV-1 roles of the thrombospondin 1 (TSP1) interactome
- **Titouan Robin** (*Institut Cochin, Paris*)
Role of the SGSM3 protein in the disruption of the immune synapse by the HIV-I viral protein Nef