

# 23<sup>rd</sup> Kumamoto AIDS Seminar

1<sup>st</sup>

October 31st, Monday

10:00-13:00 Registration, Poster hanging up & Collaboration Meeting

Parea Hall, Parea Kumamoto Prefectural Community Center 10F 13:00-17:50

13:00-13:05 Opening Remarks Hisao Ogawa  
[President, Kumamoto University]

**Session I** 13:05-14:25 [80]  
*Chairs: Kenzo Tokunaga (NIID / Kumamoto University), Kazuaki Monde (Kumamoto University)*

|                  |         |                                                               |                                                                                        |
|------------------|---------|---------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 13:05-13:30 [25] | O1 - 01 | <b>Terumasa Ikeda</b><br>Kumamoto University, Japan           | HIV-1 restriction by endogenous APOBEC3 family proteins in the myeloid cell line THP-1 |
| 13:30-13:55 [25] | O1 - 02 | <b>Akatsuki Saito</b><br>University of Miyazaki, Japan        | A zinc-finger-containing protein ZCCHC3 is a novel antiretroviral host factor          |
| 13:55-14:25 [30] | O1 - 03 | <b>Daniel Sauter</b><br>University Hospital Tübingen, Germany | HIV-1 infection activates solo-LTRs inducing antiviral gene expression and senescence  |

14:25-14:40 [15] Coffee Break

**Session II** 14:40-15:55 [75]  
*Chairs: Takushi Nomura (Kumamoto University), Sarah Rowland-Jones (University of Oxford / Kumamoto University)*

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|------------------|---------|------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| 14:40-15:00 [20] | O1 - 04 | <b>Naofumi Takahashi</b><br>Kumamoto University, Japan     | Inhibitory and stimulatory effects of IL-32 on HIV-1 infection                                                                            |
| 15:00-15:25 [25] | O1 - 05 | <b>Kenji Maeda</b><br>Kagoshima/Kumamoto University, Japan | Evaluation of residual HIV reservoir under cART toward the development of HIV curative therapy                                            |
| 15:25-15:55 [30] | O1 - 06 | <b>C. Sabrina Tan</b><br>Harvard Medical School, USA       | The role of NK and T cells in modulating immune and inflammatory pathogenesis in the brains of rhesus macaques during acute SIV infection |

15:55-16:10 [15] Coffee Break

**Keynote Lecture 1** 16:10-17:50 [100]  
*Chairs: Masafumi Takiguchi (Kumamoto University), Hiroyuki Gatanaga (NCGM / Kumamoto University)*

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|------------------|---------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| 16:10-16:40 [30] | O1 - 07 | <b>Tomáš Hanke</b><br>University of Oxford, UK/Kumamoto University, Japan         | HIVconsVX: Development of a globally relevant T-cell vaccine against HIV                                              |
| 16:40-17:10 [30] | O1 - 08 | <b>Sarah Rowland-Jones</b><br>University of Oxford, UK/Kumamoto University, Japan | Different African HIV-1 subtypes elicit distinct T-cell and Natural Killer cell profiles during acute HIV-1 infection |
| 17:10-17:50 [40] | O1 - 09 | <b>Shin-ichi Oka</b><br>NCGM/Kumamoto University, Japan                           | 35 years for AIDS: The progress of HIV treatment in Japan                                                             |

| Session III                                                                                        |                                                                                   | 9:00-10:25 [85]                                                                       |                                                                                                                                                                        |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Chairs: Tetsuro Matano (NIID/Kumamoto University), Takuya Yamamoto (NIBIO/Kumamoto University)     |                                                                                   |                                                                                       |                                                                                                                                                                        |
| 09:00-09:25 [25]                                                                                   | O2 - 10                                                                           | <b>Takushi Nomura</b><br>Kumamoto University, Japan                                   | Order of mutation selection in CD8+ T-cell epitopes in SIV/mac239 infected rhesus macaques possessing protective MHC-I genotype.                                       |
| 09:25-09:55 [30]                                                                                   | O2 - 11                                                                           | <b>Michaela Muller-Trutwin</b><br>Institut Pasteur, France                            | Immune responses in the natural host for SIV and impact for HIV research                                                                                               |
| 09:55-10:25 [30]                                                                                   | O2 - 12                                                                           | <b>Jerome Estaquier</b><br>Université Laval, Canada /Université Paris Cité, France    | Abnormal B cell differentiation in early ART-treated SIV-infected rhesus macaques is associated with the absence of full restoration of CD4 T follicular helper cells. |
| 10:25-10:40 [15]                                                                                   | Coffee Break                                                                      |                                                                                       |                                                                                                                                                                        |
| Session IV    selected talk from poster presentation                                               |                                                                                   | 10:40-12:25 [105]                                                                     |                                                                                                                                                                        |
| Chairs: Terumasa Ikeda, Chihiro Motozono, Kenji Sugata (Kumamoto University)                       |                                                                                   |                                                                                       |                                                                                                                                                                        |
| 10:40-10:55 [15]                                                                                   | SP - 1                                                                            | <b>Hesham Nasser</b><br>Kumamoto University, Japan                                    | Characterizing the fusogenicity of SARS-CoV-2 variants via Spike protein-mediated membrane fusion assay                                                                |
| 10:55-11:10 [15]                                                                                   | SP - 2                                                                            | <b>Mako Toyoda</b><br>Kumamoto University, Japan                                      | Novel authentic virus-based evaluation systems for humoral and cellular immune responses against SARS-CoV-2 variants                                                   |
| 11:10-11:25 [15]                                                                                   | SP - 3                                                                            | <b>Wajihah Sakhor</b><br>Kumamoto University, Japan                                   | Novel recombinant HIV model system reveals potential factor regulating the fate of HIV activation and latency by parallel transcriptomic and epigenomic analysis       |
| 11:25-11:40 [15]                                                                                   | SP - 4                                                                            | <b>Kaho Matsumoto</b><br>Kumamoto University, Japan                                   | The CD4 mimetic compound YIR-821 is broadly effective against HIV-1 clinical strains                                                                                   |
| 11:40-11:55 [15]                                                                                   | SP - 5                                                                            | <b>Ayaka Washizaki</b><br>NIBIOHN, Japan                                              | Analysis of follicular CD8 T cells to control SIV replication under cART                                                                                               |
| 11:55-12:10 [15]                                                                                   | SP - 6                                                                            | <b>Sho Sugawara</b><br>Duke University, USA                                           | A novel multiplex analysis reveals global downregulation of CD16 signaling pathways via an IL-18/ADAM17-dependent mechanism during lentivirus infection                |
| 12:10-12:25 [15]                                                                                   | SP - 7                                                                            | <b>Takahisa Kouwaki</b><br>Kumamoto University, Japan                                 | LGP2, a member of RIG-I like viral nucleic acid receptor, control antiviral gene expression through its ubiquitination by E3 ubiquitin ligase RIPLET                   |
| 12:25-13:30 [65]                                                                                   | Poster viewing with a light meal                                                  |                                                                                       |                                                                                                                                                                        |
| Session V: Poster Presentation                                                                     |                                                                                   | 13:30-14:50 [80]                                                                      |                                                                                                                                                                        |
| 13:30-14:10 [40]                                                                                   | Discussion Group A: Chairs: Hesham Nasser, Ryusho Kariya (Kumamoto University)    |                                                                                       |                                                                                                                                                                        |
| 14:10-14:50 [40]                                                                                   | Discussion Group B: Chairs: Godfrey Barabona, Misaki Matsuo (Kumamoto University) |                                                                                       |                                                                                                                                                                        |
| 14:50-15:00 [10]                                                                                   | Coffee Break & Voting for Best poster award                                       |                                                                                       |                                                                                                                                                                        |
| Session VI                                                                                         |                                                                                   | 15:00-15:55 [55]                                                                      |                                                                                                                                                                        |
| Chairs: Shingo Nakahata (Kagoshima/Kumamoto University), Jun-ichiro Yasunaga (Kumamoto University) |                                                                                   |                                                                                       |                                                                                                                                                                        |
| 15:00-15:25 [25]                                                                                   | O2 - 13                                                                           | <b>Kenji Sugata</b><br>Kumamoto University, Japan                                     | Integrated single cell analysis of HTLV-1 specific CD8 T cells in peripheral blood and cerebrospinal fluid from HAM patients                                           |
| 15:25-15:55 [30]                                                                                   | O2 - 14                                                                           | <b>Makoto Yamagishi</b><br>University of Tokyo, Japan                                 | Chronological genome and single-cell epigenome/transcriptome integration characterizes the evolutionary process of adult T cell leukemia-lymphoma                      |
| 15:55-16:10 [15]                                                                                   | Coffee Break                                                                      |                                                                                       |                                                                                                                                                                        |
| Keynote Lecture 2                                                                                  |                                                                                   | 16:10-17:30 [80]                                                                      |                                                                                                                                                                        |
| Chairs: Yorifumi Satou (Kumamoto University), Shinya Suzu (Kumamoto University)                    |                                                                                   |                                                                                       |                                                                                                                                                                        |
| 16:10-16:50 [40]                                                                                   | O2 - 15                                                                           | <b>Masao Matsuoka</b><br>Kumamoto University, Japan                                   | How HTLV-1 causes ATL                                                                                                                                                  |
| 16:50-17:30 [40]                                                                                   | O2 - 16                                                                           | <b>Charles RM Bangham</b><br>Imperial College London, UK / Kumamoto University, Japan | HTLV-1: transcription dynamics, and persistence in the reservoir in vivo                                                                                               |
| 19:00-                                                                                             | Reception in KKR Hotel Kumamoto 2F (Best poster award)                            |                                                                                       |                                                                                                                                                                        |

| Session VII                                                                                         |                                                                                | 9:00-10:25 [85]                                      |                                                                                                                  |
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| Chairs: Victor Appay (University of Bordeaux), Ai Kawana-Tachikawa (NIID/Kumamoto University)       |                                                                                |                                                      |                                                                                                                  |
| 09:00-09:25 [25]                                                                                    | O3 - 17                                                                        | Chihiro Motozono<br>Kumamoto University, Japan       | The SARS-CoV-2 Omicron BA.1 spike G446S mutation potentiates antiviral T cell recognition                        |
| 09:25-09:55 [30]                                                                                    | O3 - 18                                                                        | Stephanie Gras<br>La Trobe University, Australia     | Comparable CD8+ T cells response in COVID-19 vaccinated and recovered individuals is increased by booster        |
| 09:55-10:25 [30]                                                                                    | O3 - 19                                                                        | Takeo Kuwata<br>Kumamoto University, Japan           | Elicitation of broadly neutralizing antibodies in COVID-19 convalescent patients                                 |
| 10:25-10:40 [15]                                                                                    | Coffee Break                                                                   |                                                      |                                                                                                                  |
| Session VIII                                                                                        |                                                                                | 10:40-12:10 [90]                                     |                                                                                                                  |
| Chairs: Kenji Maeda (Kagoshima/Kumamoto University), Hiroyuki Oshiumi (Kumamoto University)         |                                                                                |                                                      |                                                                                                                  |
| 10:40-11:10 [30]                                                                                    | O3 - 20                                                                        | Akinori Takaoka<br>Hokkaido University, Japan        | Role of RIG-I as a two-way sensor in antiviral defense                                                           |
| 11:10-11:40 [30]                                                                                    | O3 - 21                                                                        | David Durantel<br>University of Lyon, France         | Update on the preclinical R&D of a nano-formulation of a TLR2 agonist for the treatment of chronic B/D hepatitis |
| 11:40-12:10 [30]                                                                                    | O3 - 22                                                                        | Yasuhito Tanaka<br>Kumamoto University, Japan        | A novel, small anti-HBV compound reduces HBsAg and HBV DNA by destabilizing HBV RNA                              |
| 12:10-13:10 [60]                                                                                    | Lunch Time                                                                     |                                                      |                                                                                                                  |
| Session IX                                                                                          |                                                                                | 13:10-14:40 [90]                                     |                                                                                                                  |
| Chairs: Takamasa Ueno (Kumamoto University), Tomas Hanke (University of Oxford/Kumamoto University) |                                                                                |                                                      |                                                                                                                  |
| 13:10-13:40 [30]                                                                                    | O3 - 23                                                                        | Takuya Yamamoto<br>NIBIO, Kumamoto University, Japan | Perspective for next-generation COVID-19 vaccines                                                                |
| 13:40-14:10 [30]                                                                                    | O3 - 24                                                                        | Asier Saez Cirion<br>Institut Pasteur, France        | CD8 T cell reprogramming to boost anti-HIV potential                                                             |
| 14:10-14:40 [30]                                                                                    | O3 - 25                                                                        | Victor Appay<br>University of Bordeaux, France       | Induction of functionally optimal antigen specific CD8+ T cells in HIV infection                                 |
| 14:40-14:45                                                                                         | Closing Remarks                                                                |                                                      | Shuzo Matsushita<br>[Director, Joint Research Center for Human Retrovirus Infection, Kumamoto University]        |
|                                                                                                     |                                                                                |                                                      |                                                                                                                  |
| 15:30-18:00                                                                                         | Collaboration meeting, One-on-one meeting, and Lab tour at Kumamoto University |                                                      |                                                                                                                  |

# Poster Session

## ■ Poster Discussion: November 1st, Tuesday

Group A : 13:30-14:10 [40 min]

Meeting Room 3&4, Parea Kumamoto Prefectural Community Center 9F

| Group A Chairs: Hesham Nasser (Kumamoto University), Ryusho Kariya (Kumamoto University) |                                                |                                                                                                                                                                  |
|------------------------------------------------------------------------------------------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Poster No                                                                                | Presenter                                      | Title                                                                                                                                                            |
| P-01                                                                                     | Youssef M. Eltalkhawy (Kumamoto University)    | Interplay between HIV-1 and iPS-derived self-renewing macrophage model                                                                                           |
| P-02                                                                                     | Emmanuel Nkuwi (Kumamoto University)           | Patient-derived envelope sequences are differentially sensitive to SERINC5-mediated restriction of HIV-1 infectivity                                             |
| P-03 (SP-1)                                                                              | Hesham Nasser (Kumamoto University)            | Characterizing the fusogenicity of SARS-CoV-2 variants via Spike protein-mediated membrane fusion assay                                                          |
| P-04                                                                                     | Md. Jakir Hossain (Kumamoto University)        | Adaptation of HIV-1 with hypo-functional Vif obtained from HIV-1 infected patients to stable APOBEC3H                                                            |
| P-05                                                                                     | Mst Monira Begum (Kumamoto University)         | Role of APOBEC3 family proteins in SARS-CoV-2 replication in the myeloid cell line THP-1                                                                         |
| P-06                                                                                     | Md Belal Hossain (Kumamoto University)         | Clone dynamics and its application for the diagnosis of Enzootic Bovine Leukosis                                                                                 |
| P-07                                                                                     | Samiul Alam Rajib (Kumamoto University)        | Characterization of proviral genome among the HIV-1 infected individuals                                                                                         |
| P-08                                                                                     | Akhinur Rahman (Kumamoto University)           | Exploring role of allelic DNA methylation in HIV-1 provirus silencing integrated inside actively transcribing gene                                               |
| P-09                                                                                     | M Ishrat Jahan (Kumamoto University)           | The novel mechanism of HTLV-1 driven CD4+ T cell immortalization using HBZ-Tax double transgenic mice                                                            |
| P-10                                                                                     | Ryo Shimizu (Kumamoto University)              | Creation of the myeloid cell line THP-1 that lacks the expression of APOBEC3A to APBEC3G proteins                                                                |
| P-11                                                                                     | Kei Taga (Tokyo Medical and Dental University) | HIV-1 latency is modulated by Solute Carrier Protein (SCP) expression levels in human monocytic cell line                                                        |
| P-12                                                                                     | Omnia Reda (Kumamoto University)               | A new in-vitro model to monitor HIV-1 proviral transcription dynamics by Timer-Fluorescence protein                                                              |
| P-13 (SP-3)                                                                              | Wajihah Sakhor (Kumamoto University)           | Novel recombinant HIV model system reveals potential factor regulating the fate of HIV activation and latency by parallel transcriptomic and epigenomic analysis |
| P-14                                                                                     | Mayu Okumura (Kumamoto University)             | Effect of CXCR4 oligomerization on HIV-1 infectivity                                                                                                             |
| P-15                                                                                     | Godfrey Barabona (Kumamoto University)         | Proviral DNA Genotyping in a Settings with Frequent Occurrence of Treatment Failure and HIV Drug Resistance                                                      |
| P-16 (SP-7)                                                                              | Takahisa Kouwaki (Kumamoto University)         | LGP2, a member of RIG-I like viral nucleic acid receptor, control antiviral gene expression through its ubiquitination by E3 ubiquitin ligase RIPLET             |
| P-17                                                                                     | Takehisa Watanabe (Kumamoto University)        | Identification of novel regulatory element on cccDNA that may be involved in pathological differences between HBV genotypes                                      |
| P-18                                                                                     | Zhang Wenyi (Kumamoto University)              | Subcellular dynamics of HTLV-1 bZIP factor protein and its roles in pathogenesis                                                                                 |
| P-19                                                                                     | Mitsunori Ueno (Kumamoto University)           | Single-chain antibody against HBZ modulates transcriptional profile of ATL cells                                                                                 |

**■ Poster Discussion: November 1st, Tuesday**  
**Group B: 14:10-14:50 [40 min]**

**Meeting Room 3&4, Parea Kumamoto Prefectural Community Center 9F**

| <b>Group B Chairs: Godfrey Barabona (Kumamoto University), Misaki Matsuo (Kumamoto University)</b> |                                              |                                                                                                                                                         |
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| <b>Poster No</b>                                                                                   | <b>Presenter</b>                             | <b>Title</b>                                                                                                                                            |
| P-20                                                                                               | Tosi Mwakyandile (MUHAS, Tanzania)           | A combination of low dose aspirin and antiretroviral therapy does not improve platelet and immune dysfunction in HIV- infection; preliminary findings   |
| P-21 (SP-4)                                                                                        | Kaho Matsumoto (Kumamoto University)         | The CD4 mimetic compound YIR-821 is broadly effective against HIV-1 clinical strains                                                                    |
| P-22                                                                                               | Yoshihiko Goto (Kumamoto University)         | HLA-C-restricted CTLs show potent antiviral activity across SARS-CoV-2 variants                                                                         |
| P-23 (SP-5)                                                                                        | Ayaka Washizaki (NIBIOHN)                    | Analysis of follicular CD8 T cells to control SIV replication under cART                                                                                |
| P-24                                                                                               | Isaac Ngare (Kumamoto University)            | Age-dependent Heterogeneity in Neutralizing Antibody Responses to COVID-19 Vaccination in People Living with HIV                                        |
| P-25 (SP-2)                                                                                        | Mako Toyoda (Kumamoto University)            | Novel authentic virus-based evaluation systems for humoral and cellular immune responses against SARS-CoV-2 variants                                    |
| P-26                                                                                               | Daniel Enriquez-Vera (Kagoshima University)  | Clinical features and outcomes of HTLV-1 carriers with cancer diagnosis: A retrospective cohort from 2006 to 2019                                       |
| P-27                                                                                               | Dang Thi Thu Thao (NIID/Kumamoto University) | Identification of SARS-CoV-2-specific T cell target regions in COVID-19 convalescent individuals                                                        |
| P-28                                                                                               | Mitsuyoshi Takatori (Kumamoto University)    | Establishment of a novel diagnostic algorithm using biopsy specimens in adult T-cell leukemia/lymphoma                                                  |
| P-29                                                                                               | Piyanard Boonnate (Kumamoto University)      | A natural naphthoquinone derivative compound mediated ROS and ER stress in Adult T cell leukemia/lymphoma                                               |
| P-30                                                                                               | Itnarin Mongkon (Kumamoto University)        | The anti-tumor effect of Andrographolide in Primary effusion lymphoma                                                                                   |
| P-31                                                                                               | Perpetual Nyame (Kumamoto University)        | Evaluation of the inhibitory mechanism of a derivative compound that targets HIV-1 release.                                                             |
| P-32                                                                                               | Akihiro Togami (Kumamoto University)         | New compound inhibiting the virus release is discovered using the high throughput screening system                                                      |
| P-33                                                                                               | Takeshi Nakama (Kumamoto University)         | The antigen recognition of public TCR clonotypes in SARS-CoV-2 spike-specific T cells                                                                   |
| P-34                                                                                               | Shashwata Biswa (Kumamoto University)        | Antibodies against CD4 induced epitope of HIV-1 evolve from B cells primed by gut microbiome                                                            |
| P-35                                                                                               | Sanae Hayashi (Kumamoto University)          | Clinical Utility of Droplet Digital PCR for HBV cccDNA quantification                                                                                   |
| P-36 (SP-6)                                                                                        | Sho Sugawara (Duke University, USA)          | A novel multiplex analysis reveals global downregulation of CD16 signaling pathways via an IL-18/ADAM17-dependent mechanism during lentivirus infection |
| P-37                                                                                               | Miyu Sonoda (Kumamoto University)            | Inactivation of PD-1 accelerates development of T-cell lymphoma and inflammatory diseases induced by HTLV-1 bZIP factor                                 |