



International On-line Symposium "Chronic viral infections and cancer, openings for vaccines"

DAY 1, DECEMBER 16, 2021 13.30-21.00 (GMT+3)

13.30-14.10 OPENING *Chair Assoc Prof Maria Isaguliants*

OPENING LECTURE Massimo Tommasino (International Agency for Research on Cancer, Lyon, France) HPV, skin cancer and new vaccine approaches (30 min)

Natalia Bocharova (BD Biosciences, Moscow, Russia) DISCOVERING NEW BIOLOGY WITH MULTIOMIC SINGLE CELL SEQUENCING (Sponsor presentation) (10 min)

SESSION 1. MOLECULAR PATHOGENESIS OF CHRONIC VIRAL INFECTIONS

14.10-15.00 Section 1.1 Chronic viral infections and oxidative stress

Session chair Assoc Prof Ujjwal Neogi

PLENARY LECTURE Alexander Ivanov (Engelhardt Institute of Molecular Biology) CHRONIC VIRAL INFECTIONS AND OXIDATIVE STRESS (30 min)

Fedulov Artemy (Engelhardt Institute of Molecular Biology, Moscow, Russia) HEPATITIS DELTA VIRUS ANTIGENS TRIGGER ROS PRODUCTION AND ACTIVATE ANTIOXIDANT RESPONSE FACTORS (10 min)

Kondrashova Alla (Chumakov Federal Scientific Center for Research and Development of Immune- and Biological Products of Russian Academy of Science, Moscow, Russia) CHANGE OF PHENOTYPICAL CHARACTERISTICS OF HUMAN EPITHELIAL CELLS MADE TO OVEREXPRESS THE REVERSE TRANSCRIPTASE OF HIV-1 (10 min)

Discussion & Break (10 min)

15.00-16.50 Section 1.2 Metabolic signatures of chronic viral infections

Session chair Dr Alexander Ivanov

PLENARY LECTURE Birke Bartosch (Cancer Research Center of Lyon, Lyon, France) METABOLIC CHANGES IN VIRAL INFECTIONS (30 min)

Mikaeloff Flora (Karolinska Institutet, Stockholm, Sweden) TRANS COHORTS METABOLIC REPROGRAMMING TOWARDS GLUTAMINOLYSIS IN LONG-TERM SUCCESSFULLY TREATED HIV-INFECTION: POTENTIAL ROLE IN ACCELERATED AGING AND LATENCY REVERSAL (15 min)

Bayurova Ekaterina (Chumakov Federal Scientific Center for Research and Development of Immune- and Biological Products of Russian Academy of Science, Moscow, Russia) EXPRESSION OF HIV-1 REVERSE TRANSCRIPTASE IN TUMOR CELLS OF EPITHELIAL ORIGIN MODULATES MITOCHONDRIAL RESPIRATION AND MOTILITY, BUT NOT THE GLYCOLYSIS (10 min)

Golikov Mikhail METABOLIC CHANGES IN HEPATOCYTES DURING HCV INFECTION: A STUDY IN THE PHYSIOLOGICAL MEDIA (Engelhardt Institute of Molecular Biology, Moscow, Russia) (15 min)

PLENARY LECTURE Marina Gottikh (Department of Chemistry and Belozersky Institute of Physicochemical Biology, Moscow State University) CHRONIC VIRAL INFECTIONS AND DNA REPAIR SYSTEM OF THE CELL (30 min)

Discussion & Break (10 min)

SESSION 2. CHRONIC VIRAL INFECTIONS AND CANCER

16.50-18.30 Section 2.1 Mechanisms of viral oncogenicity

Session chair Prof Birke Bartosch

PLENARY LECTURE Maria Lina Tornesello (Istituto Nazionale Tumori – IRCCS Fondazione Pascale, Naples, Italy) REVERSIBLE AND IRREVERSIBLE ACTIVATION OF TELOMERASES IN HPV-RELATED CANCERS (30 min)

Felicity Burt (Department of Medical Microbiology and Virology, University of the Free State, Bloemfontein, South Africa) ACTIVITY OF LONG CONTROL REGION OF HPV AS DETERMINANT OF ONCOGENICITY (20 min)

Dudorova Alecia & Avdoshina Daria (Paul Stradins University Hospital, and Riga Stradins University, Riga, Latvia; Chumakov Federal Scientific Center for Research and Development of Immune- and Biological Products of Russian Academy of Science, Moscow, Russia) COMPARATIVE CHARACTERISTICS OF TC-1 AND NOVEL 4T1-BASED CELL LINES EXPRESSING HPV 16 ONCOPROTEINS E6 AND E7 IN ABILITY TO REPRODUCE HPV-ASSOCIATED CARCINOGENESIS IN A MOUSE MODEL (10 min)

Kyuregyan Karen (Russian Medical Academy of Continuous Professional Education, and Peoples Friendship University, Moscow, Russia) SILENT HDV EPIDEMICS CULMINATES IN HIGH LEVELS OF LIVER CIRRHOSIS AND HEPATOCELLULAR CARCINOMA IN THE POPULATION DESPITE 20 YEARS OF HBV VACCINATION (15 min)

Toyé Rayana (Cancer Research Center of Lyon, INSERM, CNRS, Lyon, France) MicroRNAs PROFILING IN SENEGALESE HBV-INFECTED PATIENTS (10 min)

Discussion & break (15 min)

18.30-20.45 Section 2.2 Viral infections, cancer and chronic inflammation

Session chair Prof Franco M Buonaguro

PLENARY LECTURE Nicolas Noel (MCU-PH, Service de Médecine Interne et Immunologie Clinique, GHU Paris Saclay, AP-HP BICÊTRE/CEA 1184, Paris, France) CHRONIC INFLAMMATION IN HIV-1 INFECTION, ARE ELITE CONTROLLERS DIFFERENT? (30 min)

Benoit Favier (DRF-IBFJ-IDMIT, and CEA-University Paris Saclay-Inserm, Fontenay-aux-Roses, France) DYNAMICS OF LILRB2 IMMUNE-CHECKPOINT IN HIV AND SIV INFECTIONS (15 min)

Svensson Akusjärvi Sara (Karolinska Institutet, Stockholm, Sweden) THE CD4+CCR6+ T CELL COMPARTMENT IS UNIQUE IN EC COMPARED TO LONG-TERM ART TREATED INDIVIDUALS (15 min)

Sona Chowdhury (University of California, San Francisco, USA) PROGRAMMED CELL DEATH PROTEIN 1 (PD-1) AND PROGRAMMED CELL DEATH LIGAND 1 (PD-L1) EXPRESSION PROFILE BY IMMUNE AND EPITHELIAL CELLS IN PRIMARY AND METASTATIC CERVICAL CANCER TISSUES (15 min)

Trotsenko Ivan (Peoples Friendship University, Moscow, Russia) VIOLATION OF GENE REGULATION IN COLON CANCER AND ADJUTANT COLON MUCOSA REVEALED BY COMPARATIVE GENE EXPRESSION AND GENE CORRELATION ANALYSIS (15 min)

Discussion & Group Photo (20 min)

20.20 PLENARY IN-SIGHT LECTURE Margaret Liu (Protherimmune, and University of California, San Francisco, USA) NUCLEIC ACID VACCINES AND THE POTENTIAL FOR IMPROVING NON-SPECIFIC IMMUNE RESPONSES AND IMMUNE FITNESS FOR CHRONIC INFECTIONS AND CANCER (30 min)

DAY 2, DECEMBER 17, 2021 12.30-21.00 (GMT+3)

12.30 PLENARY IN-SIGHT LECTURE Fabien Zoulim (Hepatology Department, Hospices Civils de Lyon; Cancer Research Center of Lyon, Lyon, France) THE PATH TOWARDS THE CURE OF CHRONIC HBV INFECTION (30 min)

13.00-14.00 SESSION 3. POSTER PRESENTATIONS (5 min orals with PDF/ppt poster presentation + 1 min for questions)

Session chairs Assoc Prof Ujjwal Neogi and Assoc Prof Maria Isagulants

Ndow G. (Cancer Research Center of Lyon, INSERM, CNRS, Lyon, France) CONCORDANCE OF THE XPERT HEPATITIS B VIRAL LOAD TEST AND CONVENTIONAL QUANTITATIVE PCR IN DETECTING AND QUANTIFYING VIREMIA USING STORED PLASMA AND DRIED BLOOD SPOT SAMPLES IN WEST AFRICA

Baranovskii Denis (Engelhardt Institute of Molecular Biology, Moscow, Russia) EARLY HYPOCOAGULATION PREDICTS SEVERE ACUTE RESPIRATORY DISTRESS SYNDROME IN UNVACCINATED PATIENTS WITH COVID-19 RELATED PNEUMONIA

Latyshev Oleg & Bayurova Ekaterina (Gamaleya Research Center for Epidemiology and Microbiology, Moscow, Russia) ENHANCED MOTILITY OF ADENOCARCINOMA CELLS EXPRESSING HIV-1 PROTEASE

Gordeychuk Ilya (Chumakov Federal Scientific Center for Research and Development of Immune- and Biological Products of Russian Academy of Science, Moscow, Russia) CULTURING AND PHENOTYPIC CHARACTERIZATION OF PRIMARY HEPATOCYTES OF COMMON MARMOSETS (CALLITHRIX JACCHUS) AS A PLATFORM TO CREATE CELL LINES EXPRESSING VIRAL PROTEINS AND HUMAN TUMOR-ASSOCIATED ANTIGENS

Sharabrin Sergei (State Research Center of Virology and Biotechnology "Vector", Koltzovo, Novosibirsky Region, Russia) OBTAINING OF INFLUENZA A MRNA-VACCINES ENCODING ARTIFICIAL ANTIGENS USING MODIFIED ANALOGS OF NUCLEOTIDES

Rudometov Andrey (State Research Center of Virology and Biotechnology "Vector", Koltzovo, Novosibirsky Region, Russia) DESIGN OF POLYPEPTIDE HIV IMMUNOGENS INCLUDING LINEAR EPITOPES RECOGNIZED BY BROADLY NEUTRALIZING ANTIBODIES

Kostyushev Dmitry (National Medical Research Center of Tuberculosis and Infectious Diseases, Moscow, and Sirius University of Science and Technology, Sochi, Russia) TOOLS AND TECHNOLOGIES FOR INDUCIBLE AND REVERSIBLE PACKAGING OF CRISPR/CAS9 RIBONUCLEOPROTEIN COMPLEXES AND THEIR TARGETED DELIVERY BY BIOLOGICAL NANOPARTICLES

Jansons Juris (Latvian Biomedical Research and Study Center, Riga, Latvia) EFFICACY OF CO-TRANSFECTION AND LEVELS OF CO-EXPRESSION OF TWO FLUORESCENT REPORTER PROTEINS IN CO-TRANSFECTED CELLS

Kasatkin Vladimir (Peoples Friendship University, Moscow, Russia) PILOT STUDY OF DEVELOPMENT QUESTIONNAIRE IN A PEDIATRIC POST CANCER TEST

Discussion & break (5 min)

SESSION 4. IMMUNE RESPONSE IN CHRONIC VIRAL INFECTIONS AND CANCER

14.00-15.30 Section 4.1 Innate and adaptive immunity weak points

Session chair Prof Franco M Buonaguro

PLENARY LECTURE Julia Kzhyshkowska (Institute of Transfusion Medicine and Immunology, Medical Faculty Mannheim, Heidelberg University, Mannheim, Germany) MACROPHAGES AS VIRAL TARGETS AND RESERVOIRS FOR LONG-TERM SURVIVAL (30 min)

Jorma Hinkula (Linköping University, Linköping, Sweden) IMPAIRMENT OF NK-DC CROSS-TALK AS A COMPONENT OF IMMUNE DYSFUNCTION IN HIV-1 INFECTION (20 min)

Nosik Marina & Patrakova Natalia (Mechnikov Serum Institute, and Gamaleya Research Center for Epidemiology and Microbiology, Moscow, Russia) IMPAIRED PRODUCTION OF PRO-INFLAMMATORY CYTOKINES IN HIV-INFECTION ASSOCIATED WITH TUBERCULOSIS (15 min)

Anna Lucia Tornesello & Franco Maria Buonaguro (Istituto Nazionale Tumori – IRCCS Fondazione Pascale, Naples, Italy) PROFILING THE HCV IMMUNE RESPONSE IN PATIENTS WITH HCV-RELATED DISEASES BY PEPTIDE MICROARRAY ANALYSIS (15 min)

Isagulants Maria (Riga Stradins University, Riga, Latvia; Gamaleya Research Center for Epidemiology and Microbiology, and Peoples Friendship University, Moscow, Russia) ENZYMATIC ACTIVITY OF RNA DEPENDENT RNA POLYMERASE IN CHRONIC HEPATITIS C MODULATES THE INDUCTION OF TYPE I INTERFERONS (15 min)

Discussion & break (5 min)

15.30-17.00 Section 4.2 Immunometabolism of chronic viral infections and cancer

Session chair Dr Alexander Ivanov

PLENARY LECTURE Ujjwal Neogi (Department of Laboratory Medicine, Karolinska Institute, Stockholm, Sweden) IMMUNE-METABOLIC CHARACTERIZATIONS IN HIV-INFECTION - FROM ELITE CONTROLLERS TO PATIENTS ON LONG-TERM SUCCESSFUL THERAPY (30 min)

PLENARY LECTURE David Finlay (Trinity Colledge Dublin, Ireland) METABOLIC DYSFUNCTION OF NATURAL KILLER CELLS IN CANCER; NUTRIENTS AND METABOLITES PLAY THEIR PART (30 min)

Nosenko Maxim (Engelhardt Institute of Molecular Biology, Moscow, Russia; Trinity Colledge Dublin, Ireland) INFLAMMATION IS REPROGRAMMING METABOLIC STATE OF THE ORGANISM VIA ACCUMULATION OF IL-6 (15 min)

Anisov Denis ((Engelhardt Institute of Molecular Biology, Moscow, Russia) ITACONATE AND DIMETHYL ITACONATE PROMOTE LPS-INDUCED EXPRESSION OF IL-6 IN WHITE ADIPOSE TISSUE (10 min)

Discussion & break (5 min)

SESSION 5. APPROACHES TO VIRAL INFECTION AND CANCER CURE

17.00-18.50 Section 5.1 Novel viral infection and cancer treatments

Session chair Prof Birke Bartosch

PLENARY LECTURE Vladimir Chulanov (National Medical Research Center of Tuberculosis and Infectious Diseases, Moscow, Russia) VIROLOGICAL CURE OF CHRONIC HEPATITIS B INFECTION, FROM "IS IT POSSIBLE?" TO "WHEN?" (30 min)

Kostyusheva Anastasia (National Medical Research Center of Tuberculosis and Infectious Diseases, Moscow, Russia) REBOUND OF HBV REPLICATION FOLLOWED BY TRANSIENT CRISPR/CAS9 RNPS AND ITS PREVENTION BY RCDNA DEPLETION (15 min)

Brezgin Sergey (National Medical Research Center of Tuberculosis and Infectious Diseases, Moscow, and Sirius University of Science and Technology, Sochi, Russia) ANTIVIRAL ACTIVITY OF APOBEC3A AND APOBEC3B INDUCED BY DSACAS9-P300 RIBONUCLEOPROTIEN COMPLEXES (15 min)

Isabelle Chemin (Cancer Research Center of Lyon, INSERM, CNRS, Lyon, France) UPDATE ON HEPATOCELLULAR CARCINOMA BREAKTHROUGHS, ACHILLES HEAL FOR PARP INHIBITORS (20 min)

Sofia Nefedorova (Englehard Institute of Molecular Biology, Moscow) EVALUATION OF METABOLIC INHIBITORS AS COMPLEMENTS TO VIROTHERAPY OF SOLID TUMORS (10 min)

Borgoyakova Maria (State Research Center of Virology and Biotechnology "Vector", Koltzovo, Novosibirsky Region, Russia) IMMUNOGENICITY OF COMBINED DNA/PROTEIN ANTI-SARS-COV-2 VACCINE (10 min)

Discussion & break (10 min)

18.50-21.00 Section 5.2 (Re)profiling of immune response with adjuvants

Session chair Assoc Prof Maria Isaguliants

PLENARY LECTURE Alexandre Corthay (Dept. of Pathology, Oslo University Hospital, and SFF-Hybrid Technology Hub, University of Oslo, Norway) THE TYPE OF IMMUNE RESPONSE IS A CRITICAL FACTOR IN THE IMMUNE BATTLE AGAINST CANCER (30 min)

Anna Zajakina (Latvian Biomedical Research and Study Centre, Riga, Latvia) RECOMBINANT VIRAL VECTORS AS ADJUVANTS AND MODULATORS OF IMMUNE RESPONSE FOR CANCER TREATMENT (20 min)

Korotkaja Ksenia (Latvian Biomedical Research and Study Center, Riga, Latvia) MACROPHAGE 3D CULTIVATION AS A PROMISING MODEL TO STUDY THE INDUCTION OF INNATE IMMUNE RESPONSE AGAINST VIRAL INFECTIONS AND CANCER (10 min)

Merkuleva Iuliia (State Research Center of Virology and Biotechnology "Vector", Koltzovo, Novosibirsky Region, Russia) SARS-COV-2 RBD CONJUGATED WITH POLYGLUCINUM-SPERMIDINE AND dsRNA ELICITS STRONG IMMUNE RESPONSE IN MICE (10 min)

Olga Khudoleeva (Cell Biology Group, Helicon, Moscow, Russia) FLOW CYTOMETRY AND CELL SORTING IN VIRAL INFECTIONS RESEARCH (sponsor presentation) (10 min)

CLOSING LECTURE Joon Rhee (Combinatorial Tumor Immunotherapy, Medical Research Center; Department of Microbiology, Chonnam National University Medical School, Chonnam, South Korea) HOW TO MAKE CANCER VACCINES MORE EFFECTIVE? IMPORTANCE OF ADJUVANT STRATEGY (30 min)

20.50 Awards for the best oral and poster presentations by early career researchers

Group Photo & Closing of Symposium