Wednesday June 10

Registration 13:00-14:00

13:30–14:00

Opening Ceremony

14:00–14:45

Musajo Lecture

From Kynurenine Pathway to Psychiatric Vulnerability: Neuroinflammation, Dopamine and New Therapeutic Horizons

Prof. Sophie Erhardt, Karolinska Institutet, Stockholm, Sweden

Chair: Prof. Robert Schwarcz, University of Maryland School of Medicine, USA. Musajo Medal Awardee in 2015 at the 14th ISTRY Meeting.

14:45–15:30

Session 1. 2-min DATA Blitz poster presentations

Chairs: Prof. Johanna Gostner, Medical University of Innsbruck, Austria.

Prof. Francesca Fallarino, University of Perugia, Italy.

1) Variation in Kynurenine Pathway Gene Expression in Non-Alcoholic Fatty Pancreatic Disease (NAFPD).

Mika Kittaka, Notre Dame Seishin University, Okayama, Japan.

2) Differential Effects of Tempol and Aspirine Treatments on Memory and Kynurenine Pathway Alterations in APP23 Mice.

Alessandro Ieraci, eCampus University, Novedrate, Italy.

3) The deleterious effects of neurotoxin Quinolinic acid on SVZ NSCs.

Michael D. Lovelace, St. Vincent's Centre for Applied Medical Research, Darlinghurst, Sydney, NSW, Australia

4) Development of a fluorophore-bound L-tryptophan derivative for evaluating indoleamine 2, 3-dioxygenase activity by HPLC with fluorescence detection.

Mayu Onozato, Faculty of Pharmaceutical Sciences, Toho University, Japan

5) The Involvement of Renal NMDA Receptors in the Development of Quinolinic Acid Induced Renal Fibrosis.

Mamiko Ishikawa, Notre Dame Seishin University, Okayama, Japan

6) Kynurenine Aminotransferase III as the Key Enzyme Driving Immune-Induced Kynurenic Acid Synthesis: A Novel Target for Cognitive Dysfunctions and Psychotic Disorder.

Varvara Louvrou, Karolinska Institutet, Stockholm, Sweden

7) Effects of Kynurenic Acid and Its Analog SZR-104 in a Social Isolation-Induced Depression Mouse Model: A Preliminary Study.

Ágnes Szabó, University of Szeged, Szeged, Hungary

8) Long-term GAN Diet-fed MASLD Model Mice Enhance Renal Tryptophan Metabolism and Renal Ageing.

Misaki Omori, Notre Dame Seishin University, Okayama, Japan

9) Kynurenine Pathway Activation and Neurotoxic Imbalance in Multiple Sclerosis: A Systematic Review and Meta-Analysis Across Peripheral and Central Biomatrice.

Lorraine Sue Ying Tan, Macquarie University, Sydney, Australia

10) Prenatal Tryptophan Supplementation Alters the Microbiota–Gut–Brain Axis and Behavior in Autism Spectrum Disorder mouse model.

Maria Carolina Fortunato, University of Coimbra, Coimbra, Portugal

11) Indole-3-lactate and the ILA/IAA redox index correlate with disease severity and respond to acute exercise in persons with multiple sclerosis.

Tiffany Wences Chirino, TU Dortmund University, Dortmund, Germany

12) Altered tryptophan and kynurenine metabolism in schizophrenia: implications for pragmatic impairments and link with treatment-resistance.

Michele Francesco D'Incalci, Vita-Salute San Raffaele University, Milan, Italy

13) Dissecting the inhibitory effects of KYNA on prefrontal parvalbumin-positive interneurons and pyramidal cells through an optimized ex vivo calcium imaging approach.

Edoardo Tiziani, University of Ferrara, Ferrara, Italy

14) Monitoring Tryptophan Catabolism: Current Tools and Future Directions.

Alban Bessede, IMMUSMOL, Bordeaux, France

15:30-16:00 Coffee Break

16:00–17:00

Session 2. Cancer 1

Chair: Dr. Christiane A. Opitz, German Cancer Research Center, Germany

Prof. Edwin Lim, Jena University Hospital, Germany

16:00-16:15 Neoadjuvant IDO1 inhibition combined with short course radiotherapy in patients with locally advanced rectal cancer: Efficacy and safety from a phase 2 trial. Dr. Matthew A Ciorba, Washington University in Saint Louis, Saint Louis, USA

16:15-16:30 mregDC-Restricted IL4i1 Programs an Immunosuppressive Tumor Microenvironment. Prof. Marco Gargaro, University of Perugia. Italy

16:30-16:45 The interplay of tryptophan metabolism and immunoregulatory stimulation in glioblastoma. Dr. Verena Panitz, Heidelberg University Hospital, Heidelberg, Germany

16:45-17:00 The in vitro effects of kynurenine metabolites and a chemokine inhibitor CTCE-9908 on cell adhesion in B16-F10 melanoma and sEnd-2 endothelioma cells and the in vivo effect in C57BL/6 mice. Dr. Sandra Tatchum, University of Pretoria, Pretoria, South Africa

17:00-18:00

Session 3. Central Nervous System

Chair: Prof. Tina Notter, University of Zurich, Switzerland

Prof. Sarah Beggiato, University of Ferrara, Italy

17:00-17:15 Neurotoxic kynurenine pathway metabolite quinolinic acid preferentially localises to MS lesions, accumulates in astrocytes and myeloid cells, and is elevated in the cerebrospinal fluid of progressive Multiple Sclerosis patients. Dr. Michael Lovelace, St. Vincent’s Centre for Applied Medical Research, Darlinghurst, Sydney, NSW, Australia

17:15-17:30 Modulation of Serotonin 5-HT1A Receptors by Bergamot Essential Oil: A Step Toward NanoBEO Development for Neuropsychiatric Symptoms in Alzheimer’s Disease. Prof. Damiana Scuteri, University "Magna Graecia" of Catanzaro, Catanzaro, Italy

17:30-17:45 Plasma levels of neuroprotective kynurenines are negatively associated with suicidal behavior and suicide risk factors. Teodor T. Postolache, University of Maryland School of Medicine, Baltimore, MD, USA

18:00–19:30

Welcome Reception

Thursday June 11.

09:00–10:30

Symposium: Kynurenic acid: positive aspects of therapeutic promise

Chairs: Prof. Trevor Stone, University of Oxford, UK

Prof. Laszlo Vecsei, University of Szeged, Szeged, Hungary

09:00-09:20 Effects of some kynurenic acid analogues on preclinical models of neurological disorders. Prof. Laslo Veczo, University of Szeged, Szeged, Hungary

09:20-09:40 Modulation of Kynurenic Acid Metabolism: Different Approaches to Treating Memory and Cognitive Impairment. Prof. Halina Baran, Karl Landsteiner Research Institute, Lower Austria,Austria

09.40-09:55 Elevations in kynurenic acid in the lateral hypothalamus disrupt sleep and arousal states in rats. Dr. Maria V. Piroli, University of South Carolina School of Medicine, Columbia, South Carolina, USA

09:55-10:10 Astroglial disinhibition of cortical circuits disrupts cognition via kynurenic acid. Dr. Viktor Beilmann, University of Zurich, Zurich, Switzerland

10:10–10:55

Lecture

The Essentials of the Microbiome-Gut-Brain Axis: Focus on Microbial Regulation of Tryptophan Metabolism

Prof. Gerard Clarke, University College Cork, Ireland

Chair: Prof. Maria Cecilia Giron, University of Padua, Italy

10:55-11:30 Coffee Break

11:30–13:00

Symposium: Tryptophan Metabolism in Psychiatry: Key Mechanisms and Therapeutic Potential

Chair: Prof. Sophie Erhardt, Karolinska Institutet, Sweden.

11:30:11:50 Kynurenine and Serotonin Pathways in Mood Disorders: Dissecting Brain Region and Sex-Specific Changes. Dr. Samara Walpole, University of Wollongong, Wollongong, NSW, Australia

11:50-12:10 Modeling the kynurenine pathway in neuroinflammation using iPSC-derived brain organoids and astrocyte spheroids. Dr. Funda Orhan, Karolinska Institute, Sweden

12:10-12:30 Preclinical insights into the role of kynurenine and serotonin/melatonin pathways in schizophrenia. Ms. Benedetta Barzon, University of Padua, Padua, Italy

12:30-12:50 The therapeutic potential for modulating the kynurenine pathway through inhibition of kynurenine transport across the blood brain barrier. Dr. Adam Walker, University of New South Wales, Sydney, NSW, Australia.

13:00-14:30 Lunch Break and Poster Session 1

14:30–15:50

Symposium: Physical Exercise and Nutrition - Spotlight on the Kynurenine Pathway
Chairs: Prof. Philipp Zimmer, TU Dortmund University, Dortmund, Germany

Prof. Simone Eussen, Maastricht University, Maastricht, The Netherlands

14:30-14:50 Physical exercise and the KP - The muscle perspective. Dr. Jorge Ruas, University of Michigan Medical School, Ann Arbor, MI, USA

14:50-15:10 Physical exercise and the KP - The immunological perspective. Dr. Niklas Joisten, TU Dortmund University, Dortmund, Germany

15:10-15:30 Nutrition and Trp metabolism in cancer. Prof. Simone Eussen, Maastricht University, Maastricht, The Netherlands

15:30-15:50 Physical exercise and Trp metabolism in multiple sclerosis - KP, Indoles and beyond. Ms. Marie Kupjetz, TU Dortmund University, Dortmund, Germany

15:50-16:20 Coffee Break

16:20–18:05

Symposium: The role of tryptophan metabolism in healthspan: molecular and physiological insights

Chairs: Dr. Anna Ainslie, European Research Institute for the Biology of Ageing, UMCG, Groningen, The Netherlands

16:20-16:40 Investigating healthy ageing mechanisms mediated by the kynurenine pathway. Dr. Anna Ainslie, European Research Institute for the Biology of Ageing, UMCG, Groningen, The Netherlands

16:40-17:00 Elevating Physiological 3-Hydroxyanthranlic Acid Levels to Extend Healthy Lifespan. Prof. George Sutphin, University of Arizona, Tucson, AZ, USA.

17:00-17:20 Tryptophan Metabolic Flexibility in Health and Disease. Dr. Maralice Conacci Sorrell, University of Texas Southwestern Medical Center, Dallas, USA

Session 3. Cancer 2

Chair: Prof. Marco Gargaro, University of Perugia. Italy

17:20-17:35 Spatial orchestration of tryptophan metabolism reveals self-reinforcing loops driving immune suppressive microenvironments in glioblastoma. Dr. Ahmed Sadik, German Cancer Research Center, Heidelberg, Germany

17:35-17:50 Rethinking IDO1 in the tumor microenvironment: new insights into non-canonical targeting of IDO1 in cancer immunotherapy. Dr. Sofia Rossini, University of Perugia, Perugia, Italy

Session 4. Various topics

Chair: Funda Orhan, Karolinska Institutet, Sweden.

17:50-18:05 Compartmentalized regulation of the tryptophan metabolism across blood, urine, saliva, and sebum. Prof. Chai K Lim, Jena University Hospital, Jena, Thuringia, Germany

18:05-18:20 Edaravone Modulates IDO1-Dependent Tryptophan Metabolism. Dr. Chiara Suvieri, University of Perugia, Perugia, Italy

from 19:30

Social dinner

Friday June 12.

09:00–10:30

Joint Symposium co-organized by ICAAS, JSTRY and ISTRY: Lifestyle Factors: Diet and Nutrition

Chairs: Prof. Tsutomu Fukuwatari, The University of Shiga Prefecture, Japan

Prof. Hideki Matsumoto,

09:00-09:20 Metabolic dysfunction associated steatohepatitis (MASH) in niacin insufficiency. Prof. Tsutomu Fukuwatari, The University of Shiga Prefecture, Japan

09:20-09:40 Effects and Mechanisms of Anti-Inflammatory Food Components on Tryptophan Metabolic Key Enzymes and the Brain-Gut Axis. Dr. Yukari Egashira, Chiba University, Chiba, Japan

09:40-10:00 Relevance and safe intake of amino acids in supplements for human nutrition. François BLACHIER, Université Paris-Saclay, France

10:00-10:15 The impact of gut microbiota on NAD^+ metabolism. Dr. Keisuke Yaku, University of Toyama, Japan

10:15-10:30 CONCEPT - A Phase II, randomised, double-blind, placebo-controlled trial to evaluate the efficacy and safety of oral controlled-ileal-release nicotinic acid (CIR-NA) for inducing remission in subjects with prediabetes. Dr. Corinna Geisler, University Medical Center Schleswig-Holstein, Kiel, Germany

10:30–11:15

Lecture

Serotonergic modulation of emotional processing

Prof. Catherine Harmer, University of Oxford, UK

Chair: Prof. Florian Zepf, Friedrich Schiller University, Jena, Germany

11:15-11:40 Coffee Break

11:40–13:00

Symposium: Tryptophan Metabolism and Neurodevelopmental Risk: Models and Mechanisms

Chair: Prof. Ana Pocivavsek, University of South Carolina School of Medicine, Columbia, South Carolina, USA

Prof. Alexandre Bonnin, Keck School of Medicine of USC, USA

11:40-12:00 Prenatal inflammation alters serotonergic and blood brain barrier development. Prof. Alexandre Bonnin, Keck School of Medicine of USC, USA

12:00-12:20 Dysregulated Prefrontal Astrocytes Mediate Cognitive Deficits via Kynurenine Acid. Prof. Tina Notter, University of Zurich, Zurich, Switzerland

12:20-12:40 Sleep Disruptions in Pregnancy Trigger Inflammation and Tryptophan-Kynurenine Pathway Activation: Relevance to Neurodevelopmental Disorders. Prof. Ana Pocivavsek, University of South Carolina School of Medicine, Columbia, South Carolina, USA

12:40-13:00 Gestational cannabinoid exposure reshapes extracellular kynurenic acid signaling in the ventral tegmental area of periadolescent offspring: a schizophrenia-related endophenotype. Prof. Sarah Beggiato, University of Ferrara, Ferrara, Italy

13:00-14:30 Lunch Break and Poster Session 2

14:30–16:25

Symposium: Discerning the AhR Cytosolic and Genomic Pathway Engaged by Tryptophan Metabolites

Chairs: Prof. Laura Santambrogio, Weill Cornell Medicine, New York, NY, USA

Prof. William Bourguet, Center for Structural Biology, Montpellier, France

14:30-14:50 Structural insights into the activation mechanism of the aryl hydrocarbon receptor, a receptor for tryptophan-derived metabolites. Prof. William Bourguet, Center for Structural Biology, Montpellier, France

14:50-15:10 Discerning the AhR Cytosolic and Genomic Pathway Engaged by Tryptophan Metabolites. Prof. Laura Santambrogio, Weill Cornell Medicine, New York, NY, USA

15:10-15:25 Exploring the Anti-Tumor Potential of 3HKA Through Distinct AhR Signaling Routes. Prof. Ciriana Orabona, University of Perugia, Perugia, Italy

15:25-15:40 DC-Dependent AhR Signaling Controls Breast Cancer Progression. Prof. Aitziber Buque, Fox Chase Cancer Center and Lewis Katz School of Medicine Temple University, Philadelphia, PA, USA

15:40-15:55 Dietary L-Tryptophan determines the number of colonic GPR15+ regulatory T cells and susceptibility to colitis. Prof. Sangwon Kim, Thomas Jefferson University, Philadelphia, PA, USA

15:55-16:10 AhR-Driven Immune Suppression in Soft Tissue Sarcomas: Implications for cDC1 Antitumor Immunity and Therapeutic Targeting. Dr. Estevão Carlos Silva Barcelos, University of Perugia, Perugia, Italy

16:10-16:25 AhR Acts as a Metabolic Gatekeeper in Cross-Presenting cDC1 During Antitumor Immunity. Ms. Doriana Ricciuti, University of Perugia, Perugia, Italy

16:25-16:55 Coffee Break

16:55–18:10

Session 5 Immunometabolism

Chairs: Prof. Antonella Bertazzo, University of Padua, Italy

Prof. Teodor T. Postolache, University of Maryland School of Medicine, USA

16:55-17:10 Characterization of the genetically modified IDO1H350A mouse model expressing a loss-of-function mutant of Indoleamine 2,3-dioxygenase 1 enzyme. Ms. Sara Ambrosino, University of Perugia, Perugia, Italy

17:10-17:25 Cyp1a1 Controls the Balance Between Inflammatory and IDO1-Dependent Programs in Type-2 Dendritic Cells. Ms. Manola Mezzanotte, University of Perugia, Perugia, Italy

17:25-17:40 IDO-1–Driven Immunotoxicity of BPA and Alternatives: A Pathway-Level Dose–Response Perspective. Dr. Pablo Monfort-Lanzas, Medical University of Innsbruck, Innsbruck, Austria

17:40-17:55 Tryptophan catabolism via IDO1 shapes metabolic adaptation in migratory cDC1. Dr. Giada Mondanelli, University of Perugia, Perugia, Italy

17:55-18:10 An IDO1–Kynurenine–AhR Metabolic Circuit Between Dendritic Cell Subsets Controls FVIII-Specific Immune Tolerance. Dr. Francesco Sarnari, Biomedical Campus University, Rome, Italy

18:10-18:25 Amniotic Fluid Stem Cell–Derived Extracellular Vesicles Carry Functional IDO1 and Kynurenine to Metabolically Reprogram Dendritic Cells. Dr. Giorgia Manni, University of Perugia, Perugia, Italy

18:25–19:00

Closing Remarks and Awards