INTERNATIONAL CONFERENCE ON UREAGENESIS DEFECTS AND ALLIED CONDITIONS 2022. NOVEL MODELS AND TREATMENT OPTIONS

October 16-20th, 2022. Valencia, Spain

SCIENTIFIC PROGRAM

Monday, October 17, 2022. Venue 1: Jardín Botánico de Valencia: Calle Quart, 30 (entry: calle Beato Gaspar Bono)

9:00 Opening of the meeting. "Joan Plaça" Auditorium, Jardín Botánico de Valencia

9:15 Session 1: Background and Molecular bases of ureagenesis defects and allied disorders

Chairpersons: Ah Mew Nicholas and Llácer José L.

7 lectures of 20 min, each followed by 10 min discussion & 1 concise talk (10 min + 5 min disc.)

Häberle Johannes – *After 90 years of knowing the ureagenesis pathway: The "Unknowns"*

Dionisi-Vici Carlo – *Urea cycle defects and related disorders. Similarities and differences: searching for explanations*

Soria Leandro R – *O-GlcNacylation enhances CPS1 catalytic efficiency for ammonia and promotes ureagenesis*

Simpson Kara – *Concise talk – Curation of sequence variants in urea cycle genes*

11:00 – 11:30 Coffee break Osteomeles space. Jardín Botánico

11:30

Morizono Hiroki – *Using datamining to uncover causes for the low prevalence of N-acetylglutamate deficiency and understanding transcriptional regulation of urea cycle genes*

Rubio Vicente – *The structure of human Δ^1-pyrroline-5-carboxylate synthetase explains the two presentations and two modes of inheritance of the deficiency of this enzyme*

Palacín Manuel – *Learning about heteromeric amino acid transporters from Lysinuric protein intolerance (LPI)*

Ramón-Maiques Santiago – *The structure of CAD as a key tool to understand CAD deficiency*

13:30 Lunch (picnic) **Osteomeles space. Jardín Botánico**

15:15 Session 2: Pathophysiological insight and novel roles of urea cycle enzymes

Chairpersons: Caldovic Ljubica and Erez Ayelet

6 lectures of 20 min, each followed by 10 min discussion & 2 concise talks (10 min + 5 min disc.)

Baruteau Julien – *Neurodegenerative phenotype and neuronal mitochondrial dysfunction are new features of the cerebral disease in argininosuccinic aciduria*

Soria Leandro R – *Impaired nuclear glycogen metabolism affects liver homeostasis in argininosuccinic aciduria*

Felipo Vicente – *Pathophysiological bases of the neurotoxicity of ammonia*

Caldovic Ljubica – *Biomarkers for biochemical, pathophysiological and neurological effects of high ammonia concentration on the brain*

Silva Margarida F B – *Concise talk – Investigational targeted metabolomics is key to understand biomarkers of urea cycle dysregulation and effects of hyperammonemia*

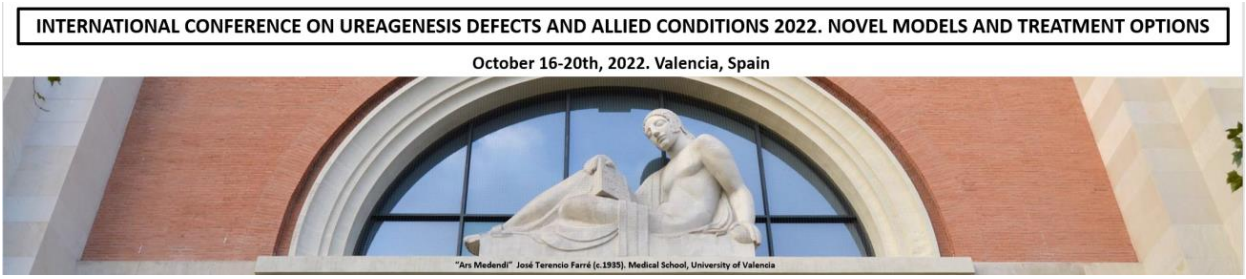
17:30 – 18:00 Coffee break Osteomeles space. Jardín Botánico

18:00

Giroud-Gerbetant Judith – *Insight into the hematological abnormalities in Lysinuric Protein Intolerance (LPI): Reduced cationic amino acid transport causes hypoxia-inducible factor (HIF) downregulation via dysregulated OXPHOS metabolism*

Erez Ayelet – *Moonlighting functions of the urea cycle enzyme argininosuccinate synthetase 1 (ASS1) in health and disease*

Makris Georgios – *Concise talk – Ectopic role of ureagenesis enzymes: The example of CPS1 in lung tumors*



SCIENTIFIC PROGRAM

Tuesday, October 18, 2022. Morning. **Venue 1: Jardín Botánico de Valencia. Calle Quart, 30 (entry: calle Beato Gaspar Bono). Joan Plaça Auditorium**

9:00 Session 3: In vitro and in vivo tools and models for disease assessment, modelling and therapy

Chairpersons: Castell José V. and Desviat Lourdes

6 lectures of 20 min, each followed by 10 min discussion & 2 concise talks (10 min + 5 min disc.)

Poms Martin – *Stable isotope tracing as a method to characterize in vivo ureagenesis function*

Marco-Marín Clara – *Pure recombinant proteins to assess disease-causing potential of missense mutations in UCDs and allied disorders*

Makris Georgios – *Cellular models for urea cycle functionality studies*

Del Caño-Ochoa Francisco – *Concise talk – A cellular assay for rapid assessment of disease-causing potential of CAD mutations*

Artuch Rafael – *Concise talk – Biomedical Point-of-Care microanalyzer for potentiometric determination of ammonium ion in plasma and blood*

11:00 – 11:30 Coffee break Osteomeles space. Jardín Botánico

11:30

Desviat Lourdes R – *Applications of RNA drugs to urea cycle defects and other inherited metabolic diseases*

Bort Roque – *Direct fibroblast to hepatocyte conversion as a key tool for X-inactivation selection in a female patient with ornithine transcarbamylase deficiency (OTCD)*

Touramanidou Loukia – *In vivo lentiviral gene therapy for argininosuccinic aciduria and optimization of liver transduction*

13:00 Lunch (picnic) **Osteomeles space. Jardín Botánico.**

15:00 SPOTLIGHT ON CITRIN DEFICIENCY (Sponsored by THE CITRIN FOUNDATION).

Venue 2: Auditorium, Universidad Católica de Valencia (UCV), Santa Ursula Campus, Calle Guillem de Castro 94

15:00 Introduction to the Spotlight. Häberle Johannes (5 min) / Yu Barbara (Citrin Foundation) (25 min)

15:30 Session 4: Molecular and pathophysiological bases of Citrin Deficiency

4 long lectures. *Chairpersons: Walker John E. and Rubio Vicente*

15:30 Keynote Lecture – Walker John E (Nobel Laureate) *Citrin deficiency and the Citrin Foundation*

16:20 Kunji Edmund RS – *Pathogenic variants of the mitochondrial aspartate/glutamate carrier cause citrin deficiency by different mechanisms*

17:00 Satrústegui Jorgina & Contreras Laura – *Aralar partially rescues phenotype of citrin-KO mitochondria*

17:40 – 18:10 Coffee break UCV cloister

18:10 Qadri Sami/Yki-Järvinen Hannele – *Citrin deficiency-associated liver disease (CDALD)*

18:40 Session 5: Citrin deficiency, Clinical insight into a pan-ethnic disease. *Chairperson: Dionisi-Vici Carlo*

3 lectures of 20 min, each followed by 10 min discussion, & 1 concise talk (10 min +5 min discussion)

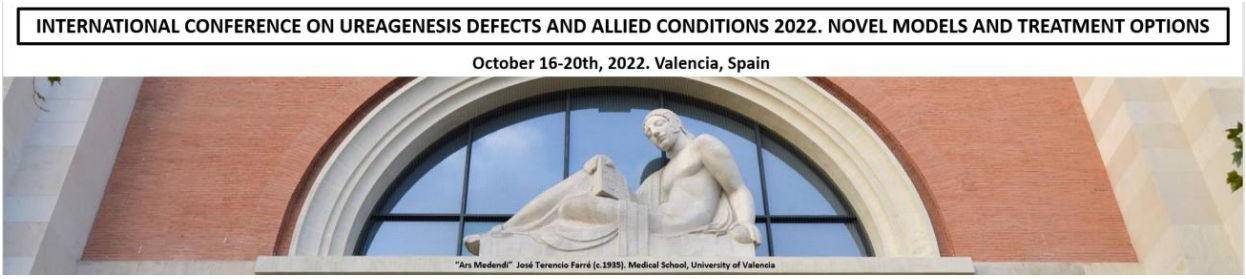
18:40 Nakamura Kimitoshi – *Nationwide outcome survey for citrin deficiency in Japan*

19:10 Yazaki Masahide – *Clinical characteristics of CTLN2 patients and therapeutic experiences*

19:40 Wortmann Saskia B – *Citrin deficiency – an underrecognized potentially life-threatening disease in Europe*

20:10 Santra Saikat – *Concise talk – Citrin deficiency in the UK with a focus on the c.1763G>A mutation*

20:25 Closing of the spotlight. Yu Barbara



SCIENTIFIC PROGRAM Wednesday, October 19, 2022 . Venue 2: Auditorium UCV, Calle Guillem de Castro 94

9:00 Session 6: Non-classical ureagenesis defects and related disorders

3 lectures of 20 min, each followed by 10 min discussion & 3 concise talks (10 min + 5 min disc.)

Chairpersons: Häberle Johannes and Ramón-Maiques Santiago

Wortmann Saskia B – *The clinical and genetic spectrum of CAD deficiency: an epileptic encephalopathy treatable with uridine supplementation*

Sánchez-Pintos Paula – *Concise talk – Could be uridine in urine a useful biomarker for selective screening of CAD deficiency?*

Correcher Patricia – *Concise talk – A Spanish patient with carbonic anhydrase 5A (CAVA) deficiency illustrates the key traits of this disorder*

Al Murshedi Fathiya – *Clinical, biochemical and molecular description of eighteen patients with carbonic anhydrase VA (CAVA) deficiency*

Boffa Iolanda – *AAV-mediated liver-directed gene therapy corrects the retinal degeneration of gyrate atrophy of the choroid and retina*.

Del Arco Araceli – *Concise talk – Aralar/AGC1 deficiency: the role of brain aralar and malate aspartate shuttle in metabolic regulation*

11:15 – 11:45 Coffee break UCV cloister

11:45 Session 7: Innovative experimental therapies. *Chairpersons: Thöny Beat and Baruteau Julian*

6 lectures of 20 min, each followed by 10 min discussion

Laemmle Alexander – *Pharmacological chaperones as potential new treatment for patients with UCDs*

Gurung Sonam– *mRNA therapy restores ureagenesis and corrects liver oxidative stress in argininosuccinic aciduria*

Wang Lili – *AAV-meganuclease-mediated gene targeting achieves efficient and sustained transduction in newborn and infant macaque liver*

Harding Cary O – *Final safety and efficacy of a phase 1/2 trial of DTX301 in adults with late-onset OTC deficiency*

13:45 Lunch (picnic) **UCV cloister**

15:30 Batzios Spyros – *Arginase I deficiency: a journey from disease pathogenesis to a novel treatment modality*

Summar Marshall – *Citrulline and its many uses as a drug*

16:30 Session 8: Clinical insight and current therapies. *Chairpersons: Sanjurjo Pablo and Morais Ana*

4 lectures of 20 min, each followed by 10 min discussion, and 4 concise talks

Stepien Karolina M – *The management and outcomes of pregnancies in females with aminoacid disorders presenting with hyperammonaemia*

Ah Mew Nicholas – *Reflections of a Teenager: The Urea Cycle Disorders Consortium at 19 - Lessons Learned, Present Projects, and Challenges for Future Clinical Trials*

17:30 – 18:00 Coffee break UCV cloister

18:00

Hattori Yusuke – *Concise talk – Report of the nationwide study about patients with urea cycle disorders in Japan*

Kido Jun – *Role of liver transplantation in urea cycle disorders: From the results of nation-wide study in Japan*

Andrade-Guerrero José – *Liver transplantation decisions in urea cycle disorders: a reference hospital experience*

Pintos-Morell Guillem – *Concise talk – Long-term follow-up after successful liver transplantation in two patients with arginase 1 deficiency*

Bernal Ana C – *Concise talk – Late onset UCD, an unsuspected pediatric disease*

MacLeod Erin – *Concise talk – Validation of a novel food photography method for dietary assessment in individuals with urea cycle disorders*

20:00 Summing up and end of meeting