PRESTO
P2X REceptorS as Therapeutic Opportunity

cost
EUROPEAN COOPERATION
IN SCIENCE & TECHNOLOGY

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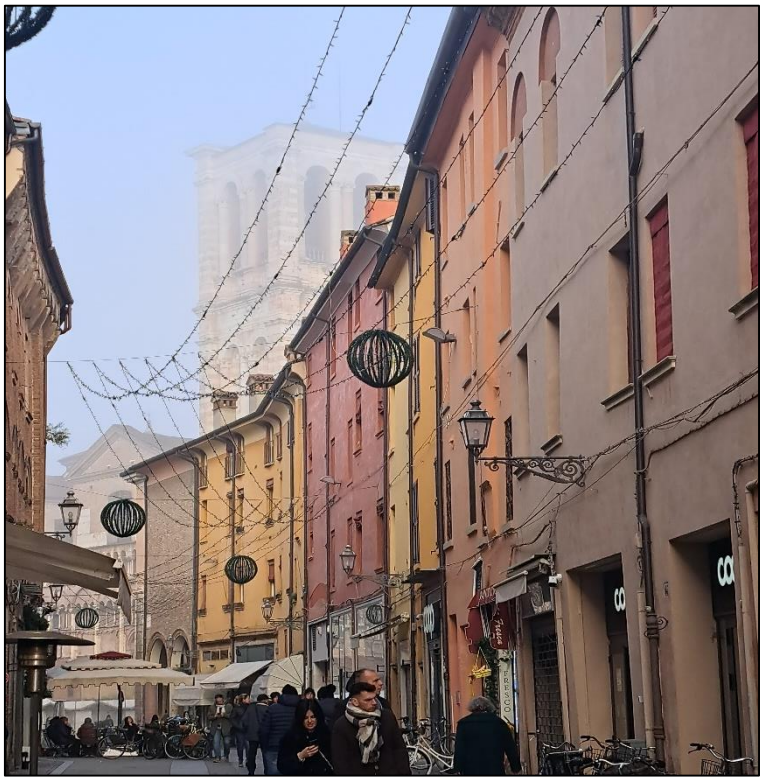
First PRESTO COST Action CA21130 Meeting

P2X receptors as therapeutic targets

PROGRAMME



8th and 9th of February 2023

Ferrara (Italy), Palazzo Trotti Mosti, Aula Magna

Via Corso Ercole I D'Este 37

Elena ADINOLFI Action Chair and Grant Holder Scientific Representative

Pablo PELEGRIN Action Vice Chair

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Mariusz WIECKOWSKI Grant Awarding Coordinator

Friedrich KOCH-NOLTE WG1 Leader

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Elena ADINOLFI Conference Host

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Francesco DI VIRGILIO

Anna PEGORARO

Valentina VULTAGGIO POMA

Mario TARANTINI

SCIENTIFIC PROGRAMME

8th February 2023

9:00-9:15 **Welcome address: Elena Adinolfi (IT)**

9:15-10:45 **Session 1: Chairs Friedrich Koch-Nolte (DE), Sahil Adriouch (FR)**

9:15-9:30 **Dariusz Gorecki (UK)** *P2X7 purinoceptor in the pathogenesis and treatment of muscular dystrophy*

9:30-9:45 **Samuel Fountain (UK)** *Targeting P2X3 and P2X4 in the cardiovascular and respiratory systems*

9:45-10:00 **Gennady Yegutkin (FI)** *ATP and adenosine metabolism in cancer and inflammation*

10:00-10:15 **Michele Zanoni (IT)** *How P2X receptors have contributed to our knowledge of glioblastoma pathophysiology*

10:15-10:30 **Mehmet Ugur (TR)** *A different look at the intracellular signalling mechanisms of P2X7 receptor*

10:30-10:45 **Maria Domercq (ES)** *Role of Irf5-P2X4 signaling pathway in myelin metabolism and in regeneration in multiple sclerosis*

10:45-11:00 **Coffee Break**

11:00-13:00 **Session 2: Chairs Francesco Di Virgilio (IT), Ivana Novak (DK)**

11:00-11:15 **Mariusz Wieckowski (PL)** *Mitochondria and P2X7– in health and disease*

11:15-11:30 **Roberta Rizzo (IT)** *Role of Herpesvirus proteins in the control of host immune response*

11:30-11:45 **Friedrich Koch-Nolte (DE)** *Targeting the P2X7 ion channel with functional nanobodies*

11:45-12:00 **Anna Marei Mann (DE)** *Modulating the function of P2X7-expressing cells with Adeno-associated viral vectors that display P2X7-specific nanobodies*

12:00-12:15 **Danijela Laketa (RS)** *Defining purinome in neuroinflammation during the course of experimental autoimmune encephalomyeltis*

12:15-12:30 **Katarzyna Roszek (PL)** *ATP-mediated signaling of mesenchymal stem cells and cancer cells – friend or foe?*

12:30-12:45 **Kübra Ustaömer (TR)** *Physiatrist view of PRESTO*

12:45-13:00 **Ana Maria Sebastião (PT)** *Neuromodulation by purines - from neurogenesis towards neuronal signalling and neuroprotection.*

13:00-14:00 **LUNCH**

14:00-15:15 **Session 1: Chairs Beata Sperlagh (HU), Cécile Delarasse (FR)**

14:00-14:15 **Cécile Delarasse (FR)** *Purinergic receptor P2X7 in animal models of neuroinflammation*

14:15-14:30 **Hana Zemkova (CZ)** *Role of the first transmembrane domain in trafficking, sensitization and dye uptake function of rat P2X7 receptor*

14:30-14:45 **Tobias Engel (IE)** *The ATP-gated P2X7 receptor as theranostic biomarker for epilepsy*

14:45-15:00 **Nadežda Nedeljković (RS)** *Neurobiology Lab at Faculty of Biology University of Belgrade – Who we are, what we do and how we can contribute to PRESTO?*

15:00-15:15 **Shai Berlin (IL)** *NMDARs— from structure function to novel therapeutics*

15:15-15:30 **Coffee Break**

15:30-17:15 **Session 2: Chairs Dariusz Gorecki (UK), Tobias Engel (IE)**

15:30-15:45 **Beata Sperlagh (HU)** *P2X receptors in psychiatric disorders*

15:45-16:00 **Carlos Matute (ES)** *Roles of P2X4 and P2X7 in demyelination and remyelination*

16:00-16:15 **Todor Dudev (BG)** *Molecular modeling studies on the mechanism of lithium's mode of action intrating bipolar disorder*

16:15-16:30 **Felipe Ortega (ES)** *Live imaging of Neural Stem Cells to study the role of purinergic signalling in their lineage progression*

16:30-16:45 **Marija Adzic (RS)** *Can Probenecid counter neuroinflammation? Drug repurposing in vitro study in rat culture astrocyte model*

16:45-17:00 **Jasmina Trojachanec Pavlovska (MK)** *From substance to new drugs: development of new drugs - Intoduction to clinical trials*

17:00-17:15 **Milorad Dragic (RS)** *Cerebral Open-Flow Microperfusion - a novel in vivo technique for continuous measurement of substance transport across intact blood-brain barrier*

17:15-19:00 **MC meeting**

20:30 **SOCIAL DINNER at Cusina e Butega, Corso Porta Reno 28, Ferrara**

9th February 2023

9:00-10:30 **Session 1: Chairs Valérie Vouret-Craviari (FR), Elena De Marchi (IT)**

9:00-9:15 **Juan José Martinez (ES)** *P2X7 receptor as a diagnostic and pharmacological target for infections and metabolic diseases*

9:15-9:30 **Maria João Queiroz (PT)** *Synthesis of heterocyclic compounds with biological properties*

9:30-9:45 **Constantinos Athanassopoulos (EL)** *P2X receptors' modulators: Are they promising for anticancer combination therapies?*

9:45-10:00 **Anna Pegoraro (IT)** *P2X7 activation and release of vesicles from tumour cells affecting metastasis*

10:00-10:15 **Sahil Adriouch (FR)** *AAV vectors coding for nanobody-based biologics targeting P2X7 and their evaluation in animal models of colitis, experimental encephalitis, or cancer*

10:15-10:30 **Ankita Agrawal (DK)** *P2X Receptors, A Clinical Biochemistry approach*

10:30-10:45 **Coffee Break**

10:45-12:30 **Session 2: Juan José Martinez (ES), Elena Adinolfi (IT)**

10:45-11:00 **Valérie Vouret-Craviari (FR)** *Activation of the eATP/P2RX7/NLRP3/IL18 axis to treat pulmonary diseases*

11:00-11:15 **Benedetta De Ponte Conti (CH)** *P2X7R mediated regulation of gut microbiota in cancer*

11:15-11:30 **Luke Tattersall (UK)** *The P2RX7B splice variant modulates osteosarcoma cell behaviour and metastatic properties*

11:30-11:45 **Ruth Murrell-Lagnado (UK)** *P2X4, lysosome function and drug discovery at other ion channel targets*

11:45-12:00 **Ivana Novak (DK)** *ATP signaling in pancreatic cancer: the P2X7 receptor*

12:00-12:15 **Joel Arrais (PT)** *Artificial Intelligence for the targeted generation of novel compounds*

12:15-12:30 **Ines Zidi (TN)** *P2XR in inflammation and cancer*

12:30-13:30 **LUNCH**

13:30-15:00 **Session 1: Chairs Luca Antonioli (IT), Pablo Pelegrin (ES)**

13:30-13:45 **Mark Young (UK)** *The molecular determinants of antagonist binding at P2X receptors*

13:45-14:00 **Annette Nicke (DE)** *Biochemical and functional analysis of P2X7 receptor signaling*

14:00-14:15 **Christa Müller (DE)** *Tools and Drugs for P2X Receptors*

14:15-14:30 **Diego Dal Ben (IT)** *Molecular modeling tools for the design of novel P2X ligands*

14:30-14:45 **Vanessa D'Antongiovanni (IT)** *Anti-inflammatory effects of novel P2X4 receptor antagonists, NC-2600 and NP-1815-PX, in a murine model of colitis*

14:45-15:00 **Eric Boué-Grabot (FR)** *Unravelling cell-specific function of P2X4 receptors in the brain using novel transgenic knock-in mice*

15:00-15:15 **Coffee Break**

15:15-16:45 **Session 2: Chairs Diego Dal Ben (IT), Niklas Rye Jørgensen (DK)**

15:15-15:30 **Pablo Pelegrin (ES)** *Modulation of the NLRP3 inflammasome by P2X7 receptor, implications in inflammation*

15:30-15:45 **Petros Petrou (CY)** *ER stress-induced glycogen metabolism during myogenesis and the link with P2X receptor signaling*

15:45-16:00 **Elisa Tinelli (IT)** *Identification of CNS penetrant P2X7 blockers: from the HTS to a preclinical model*

16:00-16:15 **Sirje Rüütel Boudinot (EE)** *Validation of anti P2X4 monoclonal antibodies*

16:15-16:30 **Relja Suručić (BA)** *P2X receptors and cannabinoids' pathophysiological intersections with possible therapeutic outcomes*

16:30-16:45 **Victoria Maneu (ES)** *P2X receptors in retinal neurodegenerative diseases: a window to brain degenerative diseases*

16:45-17:00 **Concluding remarks**

This meeting is based upon work from

PRESTO COST Action CA21130,

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COST (European Cooperation in Science and Technology)

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