

## ISN Symposium on Translational Neuroscience of G protein-coupled receptors

Symposium organizers: Drs. Karen Gregory & Meritxell Canals

### Final report

#### Conference details:

The 2<sup>nd</sup> Joint Australasian Society of Clinical and Experimental Pharmacologists and Toxicologists (ASCEPT) - Molecular Pharmacology of G protein-coupled receptors (MPGPCR) scientific meeting was held 27-30th November 2016 at the Melbourne Convention and Exhibition Centre, Melbourne, Australia. The theme of the meeting was "Therapeutic targeting: right place, right time, right effect". A truly international meeting, 474 delegates attended from 20 nations (Australia, Austria, Canada, China, Denmark, Fiji, Finland, France, Germany, Hong Kong, India, Japan, Malaysia, New Zealand, South Korea, Switzerland, Taiwan, Thailand, United Kingdom, and the United States of America). ASCEPT is an independent professional society for experts in clinical and experimental pharmacology and toxicology in Australia and New Zealand.

MPGPCR is an initiative arising from the Drug Discovery Biology theme at Monash Institute of Pharmaceutical Sciences, Monash University. The 2016 meeting was the 9<sup>th</sup> scientific meeting. The full scientific program can be found at:

<http://www.asceptasm.com/2016-annual-scientific-meeting/program-workshops/>

In summary, the 2<sup>nd</sup> Joint ASCEPT-MPGPCR scientific meeting comprised four concurrent scientific sessions, four workshops, six keynote/plenary lectures, 82 invited speakers and 82 talks selected from submitted abstracts, 221 poster presentations.

#### Symposium details:

The ISN Symposium on translational neuroscience of GPCRs was held 10:30-12:30 November 28<sup>th</sup> 2016 as part of the MPGPCR program. The session was chaired by Dr. Karen Gregory (Drug Discovery Biology, Monash Institute of Pharmaceutical Sciences, Monash University, Australia) an early career researcher (PhD, 2009) whose research program is focused on Class C GPCRs as targets for neuropsychiatric and neurological disorders. The symposium comprised three invited speakers (25min + 5min questions) and two short talks (10min + 5min questions) selected from the submitted abstracts. The emphasis of the symposium was on GPCR targets for neurological and neuropsychiatric disorders, focusing on translational research.

Prof. Bitá Moghaddam (formerly University of Pittsburgh) originally accepted our invitation to present within the symposium, however, she withdrew from the program as she had accepted a new role (department chair at OHSU), requiring her to relocate (laboratory and home) at the same time as the symposium. She was replaced in the program with Prof. Stan Skafidas (Director of the Centre for Neural Engineering, University of Melbourne). Prof. Skafidas and his team conduct truly interdisciplinary research, applying electrical engineering expertise to their current research focused on novel means to interface and interrogate neuronal systems from molecular to complex brain structures, including "brain in a dish" systems. Prof. Skafidas and team recently applied machine learning tools that identified a GPCR linked to idiopathic autism spectrum disorders.

Collectively, the invited speakers represent a broad spectrum of the current research focused on the role of G protein-coupled receptors (GPCRs) in the nervous system and their potential as drug targets. All three are world-leaders in their field, spanning both preclinical and clinical research.

#### Invited speakers:

Prof. Jeff Conn (Vanderbilt University, USA) "*Positive allosteric modulators of muscarinic acetylcholine receptors for the treatment of CNS disorders*"

Prof. Conn revealed new insights into the efficacy of muscarinic receptor allosteric modulators as anti-psychotics and cognition-enhancers.

Prof. Anissa Abi-Dargham (Stony Brook University, USA) "*Dopamine in schizophrenia: Where does it stand in the cascade of pathological events?*"

Prof. Abi-Dargham shared insights gained from clinical PET imaging studies, examining changes in the dopaminergic system in Schizophrenia.

Prof. Stan Skafidas (University of Melbourne, Australia) *“mGluR5 and its potential role in ASD”*

Prof. Skafidas reported on machine learning tools developed by his group to identify gene candidates (including GPCRs) that are predictive of pathology, such as autism spectrum disorders.

Selected short talk speakers:

Dr. Sophie Bradley (University of Glasgow, Glasgow, UK) *“M1 muscarinic allosteric modulators slow prion neurodegeneration and restore memory loss”*

Dr. Bradley, an early career researcher, shared her recent work demonstrating that M1 muscarinic positive allosteric modulators are neuroprotective and slow disease progression in the mouse prion neurodegeneration model.

Prof. Steven Charlton (University of Nottingham, Nottingham, UK) *“Extrapyramidal side effects of antipsychotic drugs are linked to their association kinetics at the dopamine D2 receptor”*

Prof. Charlton revealed new insights into the mechanisms of efficacy and side effect liability of dopaminergic antipsychotics that have emerged through analysis of drug-receptor binding kinetics.

**Financial report:**

We are grateful to ISN for sponsoring a dynamic and engaging symposium within the MPGPCR program. ISN sponsorship was acknowledged on the conference website, within the program (including an advertisement for the upcoming ISN-ESN biennial meeting), verbally by the conference and session chair and visually displayed on a banner in the main auditorium. Funds from ISN (\$5000) were used to defray in part, the expenses of invited international speakers and provide complementary registration to each invited speaker.

Complementary meeting registration provided to invited symposium speakers (excluding short talks selected from submitted abstracts) included access to the entire ASCEPT-MPGPCR scientific program (four days). ASCEPT-MPGPCR scientific meetings are not-for-profit, participant registration together with sponsorship and exhibitor fees covers venue hire, catering, AV support, conference secretariat and associated costs. Invited speakers were registered at the early-bird conference member rate \$512/each.

Cost: \$1536

All international invited speakers participating within MPGPCR symposia (including Conn and Abi-Dargham in the ISN sponsored symposium) were supported to the same extent to partially cover travel and accommodation expenses (\$2274). Cost: \$4548

[This sum was based on the following estimates of expenses:

Four nights accommodation within walking distance to conference venue at Crowne Plaza Melbourne, \$165/night = \$660 each.

Economy air travel to Melbourne (based on discount economy airfare as estimated in April 2016 on Qantas and partner airlines): Conn: Nashville – Melbourne, return, \$2048, Abi-Dargham: New York – Melbourne, return, \$1855]

Total cost of ISN Symposium = \$6084