



Second meeting of the Australian and New Zealand Purine Club

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Purines were discovered to have extracellular signalling properties in 1929 by Alan Drury and Albert Szent-Györgyi [1]. Still, it was not until 1972, when Geoffrey Burnstock proposed ATP as a neurotransmitter, that the concept of purinergic signalling was established [2]. Professor Burnstock proposed the first classification of purinergic receptors into P1 (adenosine) and P2 (ATP) [3]. Less than a decade later, the P2 receptors were classified into two broad categories, P2X and P2Y receptors [4]. The expansion of the purinergic signalling research field has gone hand in hand with the establishment of several Purine Clubs across the globe, with the first formalised in Italy in 1991 [5].

The Australian and New Zealand (ANZ) Purine Club was initiated and formed in 2018 with Prof. Burnstock (Past President), Dr. Jennie Cederholm and Prof. Ronald Sluyter (Co-Presidents), and Assoc. Prof. Srdjan Vlajkovic (New Zealand Representative) comprising the founding Executive Committee. The inaugural meeting of the ANZ Purine Club was held in May 2019, in Melbourne, Australia [6]. In 2020, Dr. Carolina Gubert (Victorian representative) and Dr. Reece Sophocleous (Early Career Research representative) joined the Executive Committee.

Following the great interest demonstrated by many groups and institutes, the second ANZ Purine Club meeting was held in July 2021, attracting more than 40 delegates. This meeting was held in a virtual setting due to COVID-19 pandemic travel restrictions and was kindly supported by *Purinergic Signalling*, Springer. The Executive Committee organised a 2-day programme including four sessions with 12 oral communications in total, including an introduction of the Burnstock Oration. This meeting was dedicated to the late Prof. Burnstock for his groundbreaking and pioneering discoveries on purinergic signalling and his role in founding the ANZ Purine Club. The Inaugural Burnstock Oration was awarded to Prof. Karen Dwyer (Deakin University), who has made significant contributions to purinergic research regionally and internationally. Prof. Dwyer completed a PhD at the Immunology Research Centre, St. Vincent's Hospital and the University of Melbourne. Prof. Dwyer contributed to the generation and characterisation of the first transgenic mouse encoding the gene for the human ectonucleotidase, CD39 [7]. Later, while working in Boston, USA, with Professors Simon Robson and Terry Strom, she identified CD39 as a functional marker of regulatory T cells in the immune system [8]. This work has been cited over 2000 times and led to a large body of work on purinergic signalling in inflammation, immunity, and transplantation. Prof. Dwyer's presentation at the meeting highlighted the role of purinergic signalling in kidney transplantation and will be published as the Burnstock Oration in this special thematic issue, "Purinergic Signalling – Perspectives from Australia and New Zealand".

The meeting also included four invited lectures. Prof. Schuichi Koizumi (University of Yamanashi and President of the Japanese Purine Club) demonstrated the P2X₇ receptor contribution to astrocyte-mediated ischemic tolerance, while Prof. Yong Tang (University of Traditional Chinese Medicine and President of the Chinese Purine Club) presented an overview on the role of purinergic signalling in acupuncture analgesia. These lectures demonstrate the continuous engagement between the ANZ and Asia-Pacific Purine Clubs. The other invited lectures were by Assoc. Prof. Srdjan Vlajkovic (University of Auckland), introducing

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the adenosine A_{2A} receptor as a novel target for the treatment of hearing loss, and Dr. Rocio K. Finol-Urdaneta (Illawarra Health and Medical Research Institute), outlining the use of automated patch clamp instruments (SyncroPatch 384PE and Patchliner, Nanion Technologies) in studying ion channels including P2X receptors.

To promote recognition and career development opportunities for early and mid-career researchers and research students, this meeting featured an Early Career Researcher Award and People's Choice Awards for the best oral presentations. Tahnee McEwan (University of Wollongong) received both awards on the first day of the meeting. Her presentation about autocrine regulation of wound healing by ATP release and P2Y₂ receptor activation was recently published [9]. Yihan Li (University of Melbourne) presented the P2X₇ receptor as a leukocyte surface biomarker for the early diagnosis of Alzheimer's disease, while Peter Cuthbertson (University of Wollongong) introduced the 6-fuopyridine hexamethylene amiloride as a non-selective P2X₇ receptor antagonist. Yihan and Peter were awarded the People's Choice award for the first and second days of the meeting, respectively. These presentations were in addition to presentations by Joelyn Wong (University of Melbourne) describing platelet P2X₁ and P2X₇ receptors, as recently published [10], Amal Elhage (University of Wollongong) exploring the impact of an anti-P2X₇ receptor antibody in graft-versus-host disease, Manuela Jorg (Monash University) describing chemical probes for G protein-coupled purinergic receptors, and Zhinoos Taidi investigating the role of P2X receptors in bladder damage (UNSW Sydney).

The meeting highlighted some of the key research in purinergic signalling in the Asia–Pacific region and provided a fantastic opportunity to interact with purinergic researchers internationally. This was especially important 2 years into the COVID-19 pandemic, a long period where these prospects have been limited.

Based on the success of the first two meetings, the next meeting is planned for 2023. We are hopeful that this meeting will be able to proceed as a joint meeting with the Chinese Purine Club and allow Asia–Pacific purinergic researchers to (finally) meet in person. This would further strengthen purinergic research across this region.

Data availability This manuscript has no associated data.

Declarations

Conflicts of interest Carolina Gubert declares that she has no conflict of interest.

Reece A. Sophocleous declares that he has no conflict of interest.
 Ronald Sluyter declares that he has no conflict of interest.
 Srdjan M. Vlajkovic declares that he has no conflict of interest.
 Jennie M.E. Cederholm declares that she has no conflict of interest.

Ethical approval This article does not contain any studies with human participants or animals performed by any of the authors.

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