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SPECIAL FEATURE EDITORIAL

Free-to-view

10th Lorne Infection and Immunity Conference 2020

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The Lorne Infection and Immunity Conference is an annual meeting held in the beachside town of Lorne, Victoria, Australia. It is the youngest of the Lorne series of meetings held every February, including Proteins, Genome, Cancer and Proteomics, which collectively have a proud history of outstanding science for up to 40 years. Lorne Infection and Immunity is a multi-disciplinary meeting and focuses on the interactions between the immune system and infecting microbes, including bacteria, viruses, fungi or parasites. The goals of the conference are to present outstanding topical science, foster collaborations, provide opportunities for development to students, post-doctoral fellows and up-and-coming researchers, and to be a platform for immunologists and microbiologists to discuss host-pathogen interactions, innate immunity and adaptive immunity and microbiology relevant to infectious and inflammatory diseases. The conference attracts discovery researchers, clinicians and representatives from industry. We have a strong track-record of ensuring equity and diversity in our program and for our delegates.

In 2020, we had our 10th anniversary conference and featured sessions on systems biology, infection and inflammation and a special session on SARS-Cov-2, at that time emerging as a pandemic virus. Other highlights included our plenary speaker, Professor Arturo Zychlinsky, who spoke on NETs which he was the first to describe, as a second function of chromatin. The plenary session also included the Hartland Oration for postgraduate students, this year Stephen Scally (WEHI) and Claudiia Stocks (IMB, UQ). The 'Infection and immunity in translation' session, moderated by Dr Eugene Maraskovsky of CSL Limited and Professor Heidi Drummer, included discussion on Burnet Institute's VISITECT® CD4 Advanced Disease Test, which was later pre-qualified by the World Health Organisation in September 2020; and a panel discussion by translation experts: Glen Begley (Biocurate), David Anderson (Burnet Institute) and Dyna Lyras (Monash University). The meeting closed with a session on Genomics featuring a presentation by Sara Cherry (University of Pennsylvania) about using functional genomics screens in *Drosophila* to identify new therapeutic targets for infectious diseases. The breadth of topics covered is evident in each year's program and exemplified well in this Special Feature of *Immunology & Cell Biology*, with three articles from invited speakers.

From Professor Ronchese's laboratory, Lamiable *et al.*[1] review advances our understanding of the subsets of dendritic cells involved in Th2 responses, which are important in parasitic infections and responses to allergens. They discuss how these immune responses are initiated, and for example,

the molecules characterising Dc on exposure to allergens and the mediators they produce to signal CD4 T cells to become effector Th2 cells.

Saunders and McConville[2] complement this theme with a review of host–pathogen interactions in leishmaniasis, a parasitic infection that causes cutaneous and visceral diseases in humans. The authors discuss the metabolic requirements of *Leishmania* amastigotes and the metabolic reprogramming of M1 and M2 macrophages, which may act as permissive or non-permissive reservoirs. These pathways are of potential importance as targets of host-directed immunometabolism therapies for leishmaniasis.

Purine metabolism is the particular focus of the review by Chua and Fraser[3], who examine components of the pathway with potential to be exploited for drug development. To do this, they looked at the genes encoding purine metabolic enzymes in over 203 species across the three domains of life, finding common elements but important differences among the Archaea, Bacteria and Eukaryota.

The papers in this Special Feature are a sample of the diversity of work presented at our meeting. We are pleased that the Lorne Infection and Immunity conference both continues to grow year-on-year and remains responsive to emerging trends in our fields. We extend a warm invitation to all readers to join us at our 11th meeting, 17–19 February 2021, which will be held online in response to COVID-19. More information: www.lorneinfectionimmunity.org.

REFERENCES

(1) Lamiable O, Mayer JU, Munoz-Erazo L, *et al.* Dendritic cells in Th2 immune responses and allergic sensitization. *Immunol Cell Biol* 2020; **98**, XXX-XXX.

(2) Saunders EC, McConville MJ. Immunometabolism of *Leishmania* granulomas. *Immunol Cell Biol* 2020; **98**, XXX-XXX.

(3) Chua SMH, Fraser JA. Surveying purine biosynthesis across the domains of life unveils promising drug targets in pathogens. *Immunol Cell Biol* 2020; **98**, XXX-XXX.

https://onlinelibrary.wiley.com/doi/10.1111/imcb.12387
https://onlinelibrary.wiley.com/doi/10.1111/imcb.12389
https://onlinelibrary.wiley.com/doi/10.1111/imcb.12394