CiRA Open Seminar

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Clinically practical T cell immunotherapies recognising cell status rather than neoantigens

Date: **Aug. 2nd (Wed), 2023**
Time: **16:00 – 17:00**
Location: **CiRA, Bldg. I, Auditorium**

Current approaches to cancer immunotherapy borrow directly from antigen-specific, adaptive CD8 T cell responses to virus infection. In cancers such as those induced by papilloma viruses or Epstein Barr virus, the antigens are viral peptides presented by MHC, whereas in other cancers, "neo-antigens" are derived from autologous proteins mutated as a result of genome instability. Therapeutic "checkpoint inhibitors" promote such T cell responses and can be highly efficacious. However, they are also efficacious in tumours lacking MHC and/or with low mutational burden that are therefore not suited to ab T cell surveillance. These favourable clinical outcomes reflect an alternative means of tumour-targeting mediated by γδ T cells that recognise combinatorial markers of cell pathology rather than specific antigens. Central to this recognition is the unique property of the γδ T cell receptor (TCR) which can actively distinguish cancerous cells, using clonotypic recognition, from healthy cells which are detected by using TCRγδ as an innate receptor. This property translates to a natural and practical therapeutic window that can explain promising clinical results from the direct application of γδ T cells as cancer therapeutics, either unmodified or coupled to CAR-T. The presentation will focus on the underlying immunological mechanisms and their practical application.

Organized by Hamazaki lab, CiRA

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