

## EDITORIAL

# Diverse immunological roles of $\gamma\delta$ T cells

*Cellular & Molecular Immunology* (2013) 10, 1; doi:10.1038/cmi.2012.73; published online 24 December 2012

Accumulating evidence suggests that  $\gamma\delta$  T cells play roles in host immune responses to inflammations/damages, tumors and infections. Recent studies have demonstrated that roles of  $\gamma\delta$  T cells can be quite broad or diverse. In this special issue, seven review articles discuss recent progress conceiving the diverse immunologic roles in  $\gamma\delta$  T cells.

Born *et al.*<sup>1</sup> summarize experimental findings implicating that  $\gamma\delta$  T cells recognize a diverse array of antigens including self and foreign, large and small, and peptidic and non-peptidic molecules. In parallel, Kalyan and Kabelitz<sup>2</sup> discuss unique and empathetic aspects of  $\gamma\delta$  T cells in terms of antigen recognition, immune response and effector function. Caccamo *et al.*<sup>3</sup> present recent observations suggesting that human  $\gamma\delta$  T cells can evolve into multiple T helper-like effector functions, with plasticity feature. While Fournié *et al.*<sup>4</sup> identify recently gained information regarding human  $\gamma\delta$  T cell-targeted clinical trials for immunotherapy against late-stage cancers, Li *et al.*<sup>5</sup> summarize results in studies of  $\gamma\delta$  T cells in HIV-infected humans. Tu's group<sup>6</sup> outlines anti-infection potential of  $\gamma\delta$  T cells. Finally, Chen<sup>7</sup> reviews recent publications suggesting multifunctional immune responses and effector functions of phosphoantigen-specific  $\gamma\delta$  T cells in tuberculosis and other infections in humans and nonhuman primates.

These reviews are comprehensive and up-to-date, supporting the view that  $\gamma\delta$  T cells play broad immunological roles in host

responses. The in-depth discussions also provide provocative speculations and hypotheses that will facilitate future studies of  $\gamma\delta$  T cells.

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