CCR6 and NK1.1 distinguish between IL-17A and IFN-?-producing ?? effector T cells

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?? T cells are a potent source of innate IL-17A and IFN-?, and they acquire the capacity to produce these cytokines within the thymus. However, the precise stages and required signals that guide this differentiation are unclear. Here we show that the CD24low CD44 high effector ?? T cells of the adult thymus are segregated into two lineages by the mutually exclusive expression of CCR6 and NK1.1. Only CCR6+ ?? T cells produced IL-17A, while NK1.1+ ?? T cells were efficient producers of IFN-? but not of IL-17A. Their effector phenotype correlated with loss of CCR9 expression, particularly among the NK1.1+ ?? T cells. Accordingly, both ?? T-cell subsets were rare in gut-associated lymphoid tissues, but abundant in peripheral lymphoid tissues. There, they provided IL-17A and IFN-? in response to TCR-specific and TCR-independent stimuli. IL-12 and IL-18 induced IFN-? and IL-23 induced IL-17A production by NK1.1+ or CCR6+ ?? T cells, respectively. Importantly, we show that CCR6+ ?? T cells ar