PASTEUR INSTITUTE SEMINAR SERIES

Giovedì 18 Luglio, ore16.00

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The epigenetic landscape of tissue resident memory (TRM) CD8+ T cells in the human skin

Tissue-resident memory T (TRM) cells are long-lived lymphocytes of non-lymphoid tissues and organs that provide local protection at barrier surfaces. In human skin, TRM cells represent the predominant lymphocyte population comprising subsets with distinct cytokine profiles whose differentiation, effector mechanisms and cellular interactions remain poorly defined. We have identified a functional dichotomy of epidermal CD8+ TRM cells, where CD49a expression marked cells poised for cytotoxicity and IFN-production, while IL17-producing cells were confined within subsets lacking CD49a expression. To understand the molecular circuitry that regulates the differentiation and maintenance of highly specialized populations of resident CD8 cells, we analyzed global chromatin accessibility in relation to gene expression in CD8+ TRM cells and determined that the unique chromatin configuration of distinct CD8+ TRM subsets foreshadowed differences in gene transcription. Understanding the molecular network regulating cytotoxicity, cytokine production and establishment of immunological memory will elucidate how TRM cells can be controlled in settings of aberrant activation or harnessed for immunity to infections or cancer.

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