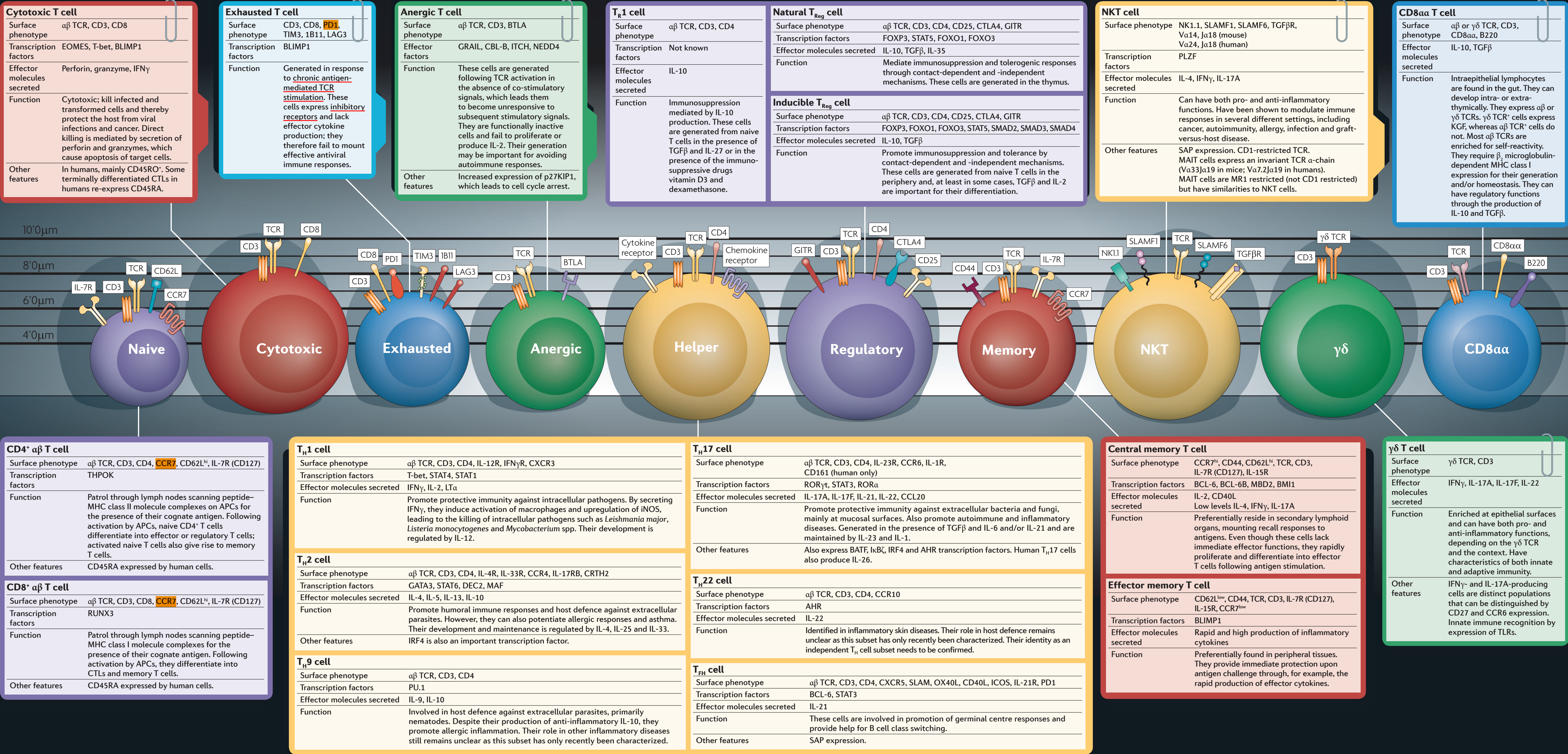


T cells: the usual subsets

Chen Dong and Gustavo J. Martinez

T cells have important roles in immune responses and function by directly secreting soluble mediators or through cell contact-dependent mechanisms. Many T cell subsets have been characterized. Although effector T cells were originally considered to be terminally differentiated, a growing body of evidence has challenged this view and suggested that the phenotype of effector T cells is not completely fixed but is more flexible or plastic. T cells can have 'mixed' phenotypes (that is, have characteristics usually associated with more than one T cell subset) and can interconvert from one subset phenotype to another, although instructive signalling can lead to long-term fixation of cytokine memory. T cell plasticity can be

important for adaptation of immune responses in different microenvironments and might be particularly relevant for host defence against pathogens that colonize different tissues. Distinct T cell subsets, or differentiation states, can be identified based on the cell surface markers expressed and/or the effector molecules produced by a particular T cell population. This Poster summarizes our current understanding of the surface markers, transcriptional regulators, effector molecules and functions of the different T cell subsets that participate in immune responses. Further knowledge of how these T cell subsets are regulated and cooperate with each other will provide us with better tools to treat immune-related diseases.



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Abbreviations

AHR, aryl hydrocarbon receptor; APC, antigen-presenting cell; BATF, basic leucine zipper transcription factor, ATF-like; BCL-6, B cell lymphoma 6; BLIMP1, B lymphocyte-induced maturation protein 1; BTLA, B and T lymphocyte attenuator; CBL-B, Casitas B-lineage lymphoma B; CCL, CC-chemokine ligand; CCR, CC-chemokine receptor; CRTH2, chemoattractant receptor-homologous molecule expressed on T<sub>H</sub>2 cells; CTL, cytotoxic T lymphocyte; CTLA4, cytotoxic T lymphocyte antigen 4; CXCR, CXCR-chemokine receptor; EOMES, eomesodermin; FOX, forkhead box; GATA3, GATA-binding protein 3; GITR, glucocorticoid-induced TNF-receptor-related protein; GRAIL, gene related to anergy in lymphocytes; IκB, inhibitor of NF-κB-ι; ICOS, inducible T cell co-stimulator; IFNγ, interferon-γ; IL, interleukin; iNOS, inducible nitric oxide synthase; IRF4, interferon-regulatory factor 4; ITCH, itchy homologue E3 ubiquitin protein ligase;

J, joining region; KGF, keratinocyte growth factor; L, ligand; LAG3, lymphocyte activation gene 3; LTα, lymphotoxin-α; MAF, musculoaponeurotic fibrosarcoma oncogene; MAIT, mucosal-associated invariant T; MBD2, methyl-CpG-binding domain protein 2; MR1, MHC-related protein 1; NEDD4, neuronal precursor cell-expressed developmentally downregulated 4; NKT, natural killer T; p27KIP1, p27 kinase inhibitory protein 1; PD1, programmed cell death 1; PLZF, promyelocytic leukaemia zinc-finger; R, receptor; ROR, retinoic acid receptor-related orphan receptor; RUNX3, Runt-related transcription factor 3; SAP, SLAM-associated protein; SLAM, signalling lymphocytic activation molecule; SMAD, mothers against decapentaplegic homologue; STAT, signal transducer and activator of transcription; TCR, T cell receptor; T<sub>H</sub>1, T follicular helper; TGFβ, transforming growth factor-β; THPOK, T<sub>H</sub>-inducing POZ/Kruppel-like factor; T<sub>H</sub>2, T helper; TIM3, T cell immunoglobulin domain and mucin domain protein 3; TLR, Toll-like receptor; V, variable region.

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