

T cell nomenclature: from subsets to modules

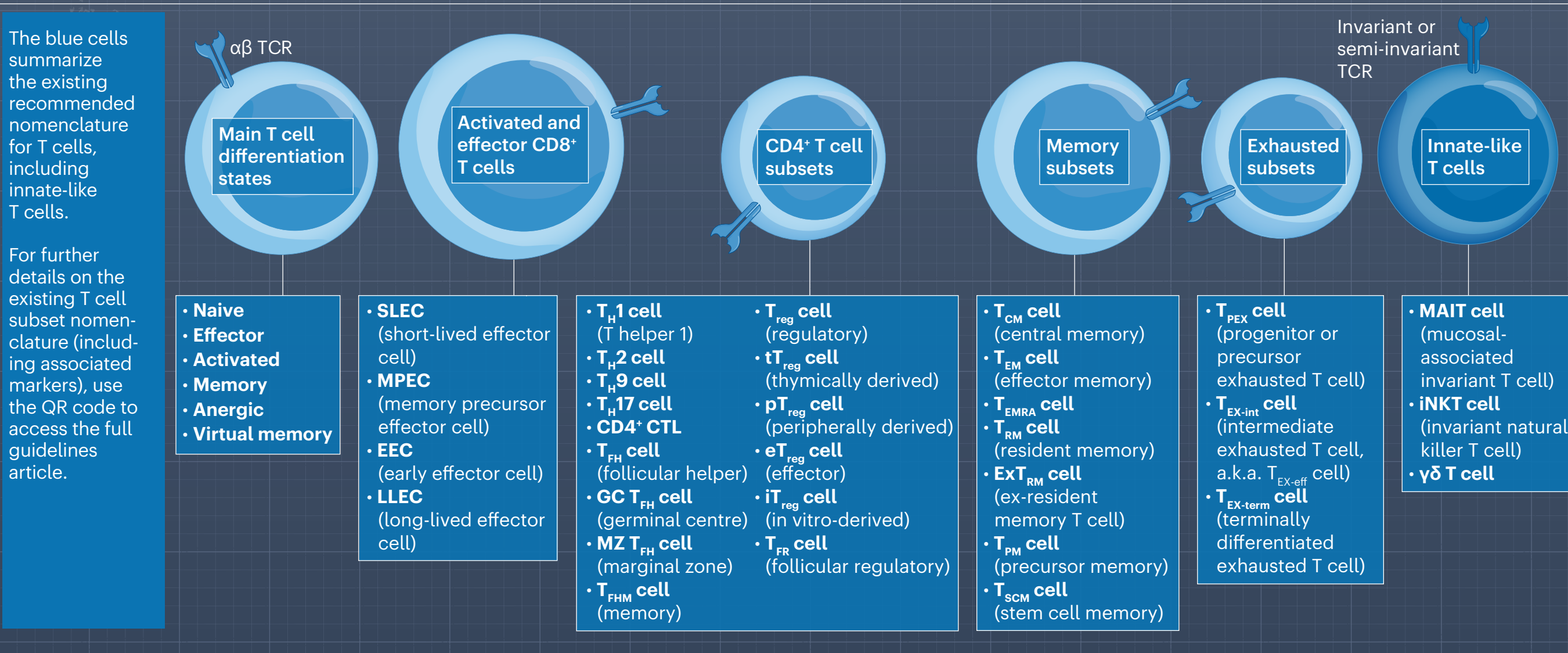
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Advances in T cell biology have revealed heterogeneity among T cell populations that is not captured by the existing nomenclature. One problem is that existing terms combine biologically discrete properties under one label. For example, the name ‘central memory T cell’ implies information about function, migration, developmental potential and/or

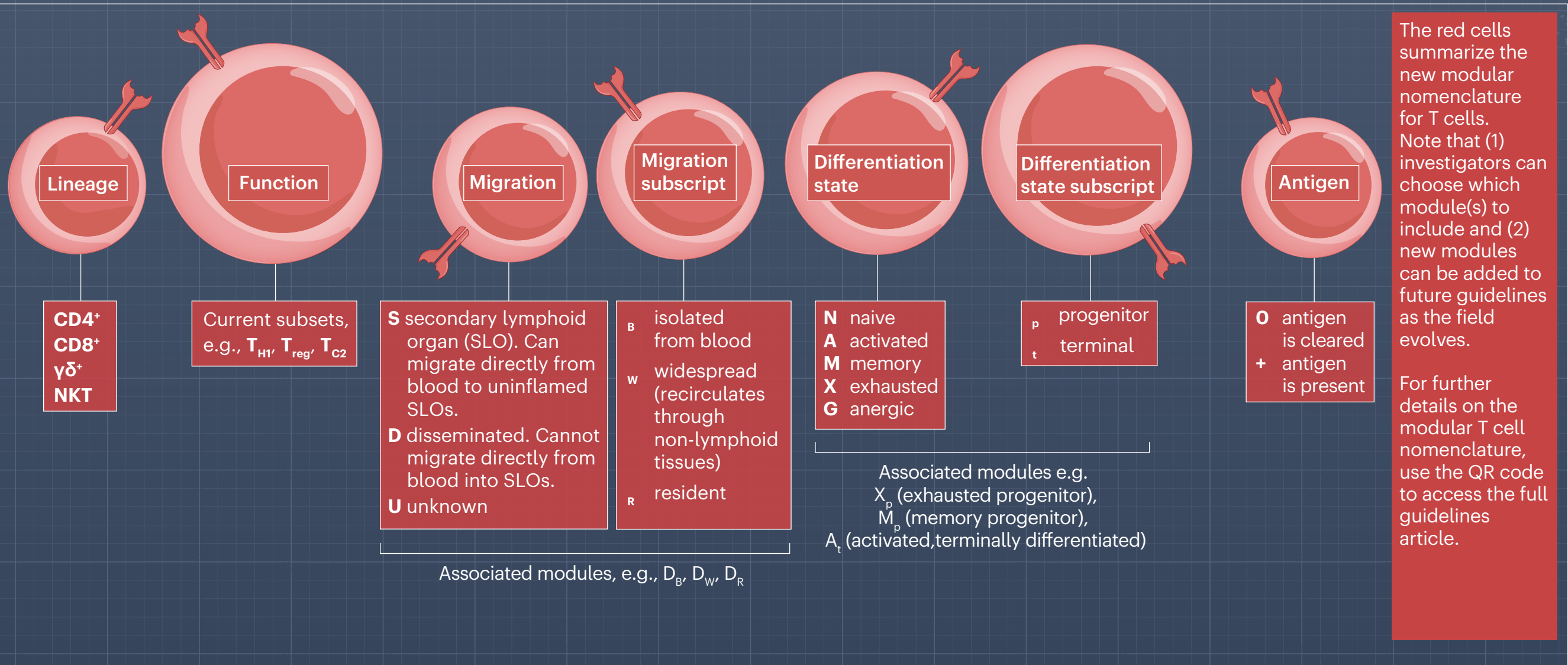
phenotype, but these qualities are not always co-regulated. This issue has caused an ad hoc broadening of core T cell subset definitions and the invention of new subset designations that have not been uniformly delineated. For this reason, a modular nomenclature was developed that isolates the naming conventions for T cell lineages, functions, migration

properties, differentiation states and antigen context into discrete and optional descriptors. This allows for much greater flexibility, brevity and precision of language. Moreover, the modular syntax is adaptable to future discoveries and can be expanded on without dismantling what is already established. Scan the QR code for further information.

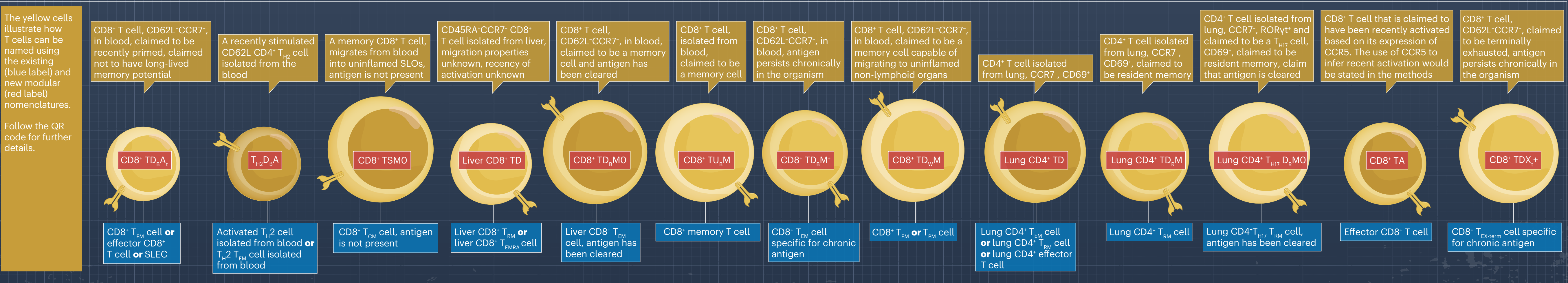
Existing T cell subset nomenclature



Alternative modular T cell nomenclature: version 1.0



Example uses of subset versus modular nomenclature for T cells



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Abbreviations

a.k.a., also known as; CCR, CC-chemokine receptor; CTL, cytotoxic T lymphocyte; EEC, early effector cell; GC, germinal centre; iNKT cell, invariant natural killer T cell; LLEC, long-lived effector cell; MAIT cell, mucosal-associated invariant T cell; MPEC, memory precursor effector cell; MZ, marginal zone; ROR γ t, retinoic acid receptor-related orphan receptor- γ ; SLEC, short-lived effector cell; T $_{\text{H}}$, cytotoxic T; TCR, T cell receptor;

T_{CM} cell, central memory T cell; T_{EM} cell, effector memory T cell; T_{DMRA} cell, CD45RA⁺ effector memory T cell; T_{EX} cell, exhausted T cell; T_{EX-int} cell, intermediate T_{EX} cell; T_{EX-term} cell, terminal T_{EX} cell; T_{FH} T follicular helper; T_{HM} cell, memory T_H cell; T_{reg} cell, T follicular regulatory cell; T_H T helper; T_{EX} cell, precursor or progenitor T_{EX} cell; T_{reg} cell, regulatory T cell; eT_{reg} cell, effector T_{reg} cell; iT_{reg} cell, in vitro-derived T_{reg} cell; pT_{reg} cell, peripherally derived T_{reg} cell; tT_{reg} cell, thymically derived T_{reg} cell.

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Guidelines for T cell nomenclature