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## Educational Note

# T cell activation in cancer

Running title: T cells in cancer

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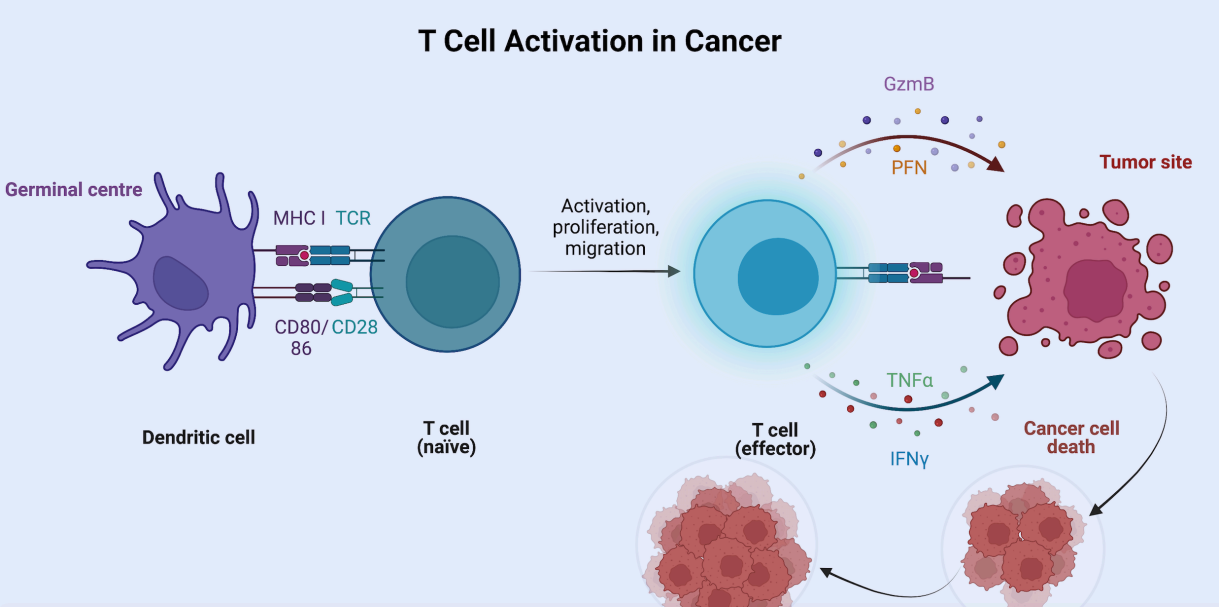


**Fig. 1 Mechanisms of T cell activation in cancer.** Previous to activation, professional antigen-presenting cells such as dendritic cells must load antigen onto MHC molecules such as MHC-I (for CD8 T cells) to make them equipped for contact with a naïve T cell that exhibits a cognate T cell receptor (TCR). It also grants appropriate co-stimulatory ligands CD80/86 for the corresponding CD28 co-stimulatory receptor, which is expressed in both classes of T cells. Soon after activation, mostly in the lymphoid tissue, T cells are activated when their TCR bind to their cognate antigen presented by dendritic cells. This is done in conjunction to CD28 28 binding with CD80/86. Proliferation and migration of the activated T cells in the site of the tumor is taking place and the self-perpetuated promotion of their enhanced T cell activation and proliferation, is further augmenting the effector function of cytotoxic T cells and their antitumoural T lymphocyte potential. Pro-inflammatory and anti-tumour related cytokine production, such as that of interferon-γ (IFN-γ) nd tumor necrosis factor α (TNF-α) is promoted. Subsequently, more T cells bind to tumour antigens presented by MHC-I in cancer cells through their TCRs. This process leads to the release of perforin and granzyme B, which are known cytolytic mediators and can generate adequate tumour killing (1-3). Prepared using Biorender under license to DPB.

AUTHORS CONTRIBUTION

The authors prepared the manuscript and the artwork. All authors approve the final version of the manuscript.

CONFLICT OF INTEREST

The Authors declare no conflict of interest.

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