Dendritic cells and their role in antitumor immunity

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Dendritic cells (DCs) are central regulators of the adaptive immune response, and as such are necessary for T-cell-mediated cancer immunity. In particular, antitumor responses depend on a specialized subset of conventional DCs that transport tumor antigens to draining lymph nodes and cross-present antigen to activate cytotoxic T lymphocytes.

DC maturation is necessary to provide costimulatory signals to T cells, but while DC maturation occurs within tumors, it is often insufficient to induce potent immunity, particularly in light of suppressive mechanisms within tumors. Dendritic cells present tumor antigen with major histocompatibility complex class II (MHCII) to CD4+ T lymphocytes. What about MHC I, they present to CD8+ T cell.

Dendritic cells (DCs) with their potent antigen presenting ability are long considered as critical factor in antitumor immunity.Therefore, dendritic cells are the main goal of the therapeutic standpoint against tumor, which envisages the introduction of tumoric antigen by the dendritic cells