B Cells in Cancer Biology

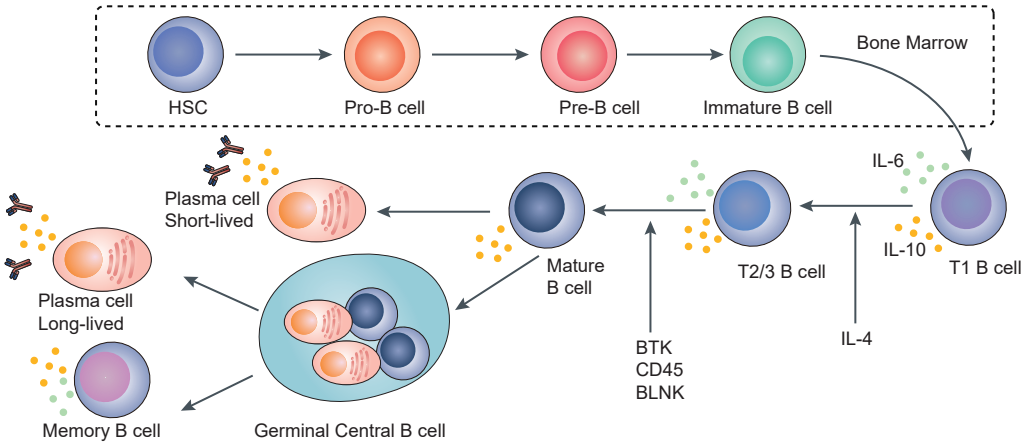
Recent research has proved B cells' dual role in cancer immunotherapy. Tumor-infiltrating B cells can show both protumor and antitumor effects, depending on the tumor microenvironment, phenotypes of B cells present, and antibodies they produce.

B cells and plasma cells support antitumor immune responses through several mechanisms. Plasma cell secretion of tumor cell-specific IgG1 antibodies can mediate ADCC and phagocytosis of tumor cells. B cells participate in the presentation of tumor-derived antigens to CD4+ and CD8+ T cells, which can directly present tumor-associated antigens they've captured via B cell receptors. And produced antibodies can support the uptake of tumor antigens by TAMs and dendritic cells. In addition, B cells may promote antitumor immunity through the release of cytokines driving cytotoxic immune responses. B cells can also directly attack tumor cells using granzyme B and TRAIL.

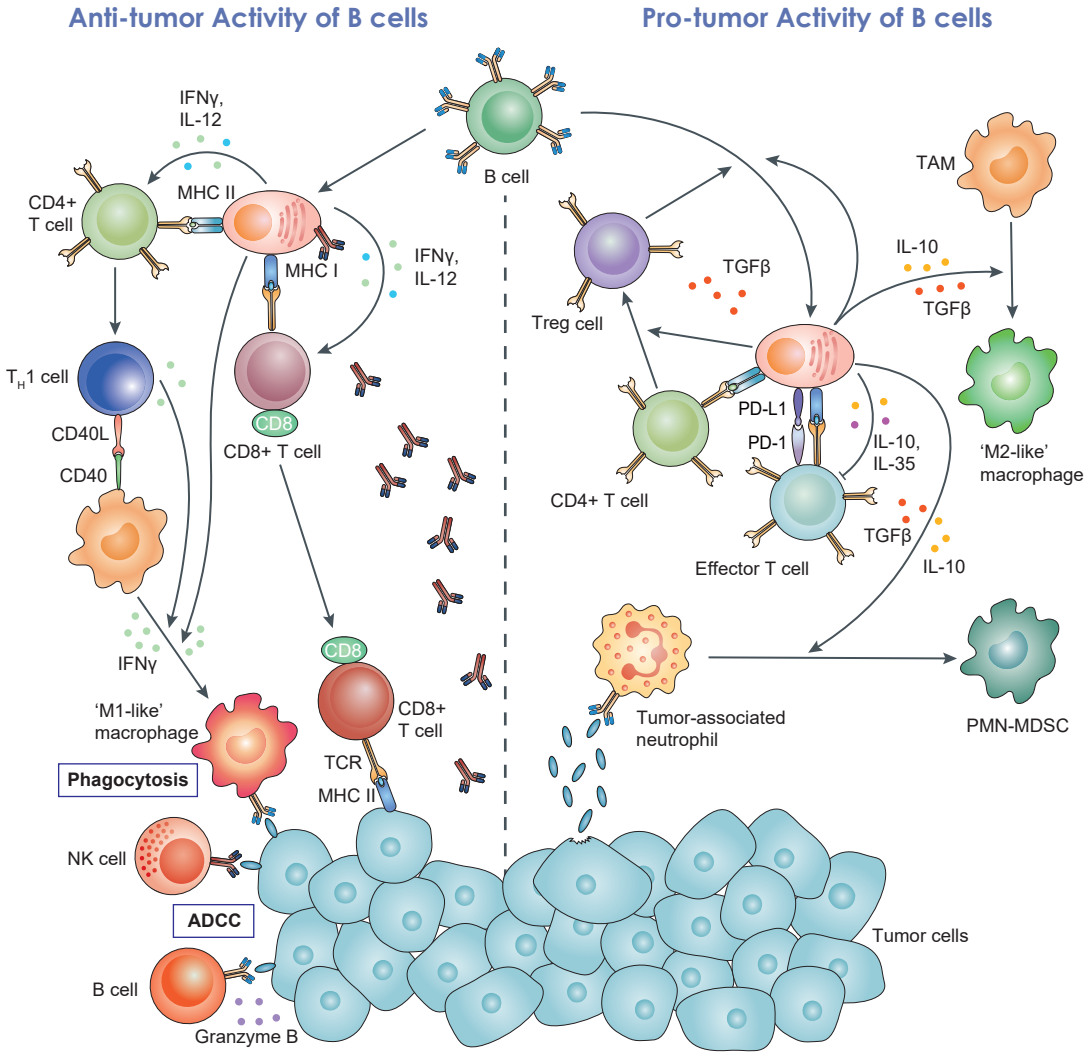
B cells and plasma cells may promote tumor growth through several mechanisms. They can release immunosuppressive cytokines that promote immunosuppressive phenotypes in myeloid cells, promote Treg cell development, and suppress or misdirect effector T cell responses. The latter processes could be linked to B cells presenting tumor-derived antigens, which could be aided by PDL1 expression. B cells can also produce antibodies that are ineffective at mediating antitumor responses, such as antibody classes that do not facilitate antigen presentation or mediate ADCC and tumor cell phagocytosis, or IgG1 antibody specificities that do not elicit an efficient T cell response or innate cell attack.

Creative Biolabs Cellular Therapy Solutions

1 B cell differentiation pathways



2 Anti-tumor and pro-tumor activity of B cells



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- CAR-T Cell Therapy Development Services
- TCR Modified T Cell Development Services
- CAR-B Cell Therapy Development Services
- CAR-NK/Macrophage Development Services
- Dendritic Cell Vaccine Development Services

Products:

- CAR/TCR Vector Systems
- CAR/TCR Viral Particles
- CAR/TCR Jurkat Cells
- Immune Cell Products

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