Cell Surface Proteins - B Cells

B Cells express multiple cell surface proteins Ig, CD19, CD20, CD21, CD40, MHC II, and B7. Immunoglobulin, or Ig is initially IgM, which either differentiates or binds to an antigen. B Cells also display CD19. CD20 is also present, which is associated with lymphomas and leukemias, especially Hodgkin's lymphoma. Another cell surface protein is CD21 works with CD19 as a subunit of a low-threshold B cell receptor, which responds and binds to various antigens. CD21 is also associated with Epstein-Barr Virus, which binds to this cell receptor. CD40 is important in immune and inflammatory responses, including T cell-dependent immunoglobulin class switching and memory B cell development. MHC II, or major histocompatibility complex II molecules are also found on B cells these present foreign antigens to T-helper Cells. B7 is a cell surface protein important in the activation of T cells.



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Ig
Immune-goblin
Immunoglobulins are also known as antibodies and rearrange during B cell development.

CD19
CD 19 card
CD19 is expressed on B cells and acts as a co-receptor with CD21 and is present on B cells at all levels but is lost if it transforms into a plasma cell.

CD20
CD (20) Dollar-bill
CD20 is expressed on the cell surface of B cells. It is involved in optimizing immune responses. It is present on B cells after the Pro-B but is lost if the transformation to a plasma cell occurs.

CD21
CD (21) Blackjack
Also known as the Epstein-Barr receptor, CD21 is expressed on the cell surface of B cells while acting as a co-receptor with CD19 to enhance Ag binding. It is present after the Pre-B stage until terminal differentiation into a plasma cell.

CD40
CD (40) Ounce
CD40 is a costimulatory molecule expressed by B cells. It binds to CD40 ligands and is required for immunoglobulin isotype switching. It enhances the affinity of the immunoglobulin for specific antigens and the formation of plasma and memory B cells.

MHC II
MHC complex with (2) Tutu
Major histocompatibility complex II molecules are part of the human leukocyte antigen (HLA) system (HLA-DP, HLA-DQ, HLA-DR) and are present on antigen-presenting cells, including B cells, macrophages, and dendritic cells.

B7
Basketball Lucky (7)
B7 is a protein involved in the activation of T cells.

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