Humoral immune response and antibody production

1- Antigen recognition & presentation:

This occurs through Antigen Presenting Cells (APC).

-APC engulfs microorganisms, which undergo incomplete digestion.

- Fragmentation of Antigen to different.

- epitopes exposed to the surface of APC (on MHC II).

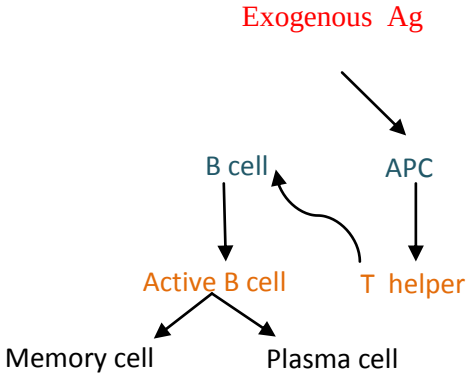
- The presentation of epitopes on MHC II $\xrightarrow{\text{IL-1}}$ activates T helper.

-T helper carries CD4 receptor for MHC II.

2- Antibody production:

T helper stimulate B cell (which carry BCR) activate B cells to produce plasma cells [able to produce Antibodies] & memory cell (prolonged life span) for secondary immune response when the same antigen inter the body for the second time.

Primary immune response	Secondary immune response
*The body exposed to Ag for 1st time. * Antibodies will be produced by plasma cells. * **Antibody production take** longer time *IgM level is predominant.	*the body exposed to Ag for 2nd time. *memory cell is responsible. *short time for production of antibody. *IgG is predominant (stronger IR)



Cell mediated immunity