**Extracellular killing – Lymphocyte cell – Natural killer cell**

• Natural killer (NK) cells play an important role in the innate host defenses.

• NK is a large granular lymphocyte (LGL).

• They are derived from hematopoietic blood lymphocytes.

• The NK cell activity dose not requires any previous exposure to the antigens.

• They are called natural killer cells because they are active without prior exposure to the virus, not specific for any virus and they can kill without antibody, but antibody enhances their effectiveness by a process called ADCC (Antibody-dependent-cell mediated-cytotoxicity).

• NK cells have no immunologic memory, and for the above reasons called natural killer cell.

• are identified by the presence of CD56 & CD16 and absence of CD3

• activated by IL2 and IFN-( to become LAK cells

**Mode of NK cell action**

NK cells kill their targets (tumor cells and virus infected cells) by perforating the cell membrane of the target cell, causing pores to form. The molecules responsible for the pore forming are called perforins which are found with the granzymes in the granules of NK cells.

**Perforen**

• Perforin is found exclusively in the cytoplasmic granules of mouse NK cells

• Pore forming protein of plasma membrane or endosome allowing granzymes to enter target cell cytoplasm

• Granulysin, which is found in humans is thought to function similarly to perforin

**Granenzyme**

• Protease (enzyme that chews up proteins, kills cell) located in cytoplasmic granules of killer cells



