Natural Killer Cells have an innate ability to recognize and destroy non-self cells. They are characterized as CD56⁺ CD57⁻ NK cells.

**Frequency of NK cells in peripheral blood**

- 6% of peripheral blood lymphocytes are natural killer cells.

**Subsets defined by density of CD56 expression**

- CD56bright CD16⁻:
  - Weakly cytotoxic without chemokinesis.
  - Prolymphoblastic cytoplasm producing NK cell subset.

- CD56dim CD16⁺:
  - Extreme cytotoxic activity without.
  - Major cytokine producing peripheral blood subset.

CD56dim CD16⁺ NK cells are commonly believed to be precursor cells of the CD56bright subset.

**Frequency of subsets in peripheral blood**

- 90% of circulating peripheral blood NK cells are CD56⁺ CD16⁻.

**NK cell function: “missing self” hypothesis**

- **Self**: Target cell is a normal, autoclonal cell, recognized as such, and never seen by the immune system.

- **Recognition as Self**: Do Not Destroy.

- **Missing Self**: Target cell has lost MHC class I expression, is recognized as “missing self”, and destroyed.

- **Non-Self**: Target cell has foreign MHC class I expression, is recognized as “non-self”, and destroyed.

- **Recognition as Non-Self**: Do Not Destroy.

- **Induced Self**: Target cell has shown reduced proteins, is recognized as “induced self”, and destroyed.

- **Recognition as Induced Self**: Do Not Destroy.

**Current research: genetic manipulation to improve efficacy of NK cell immunotherapy**

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