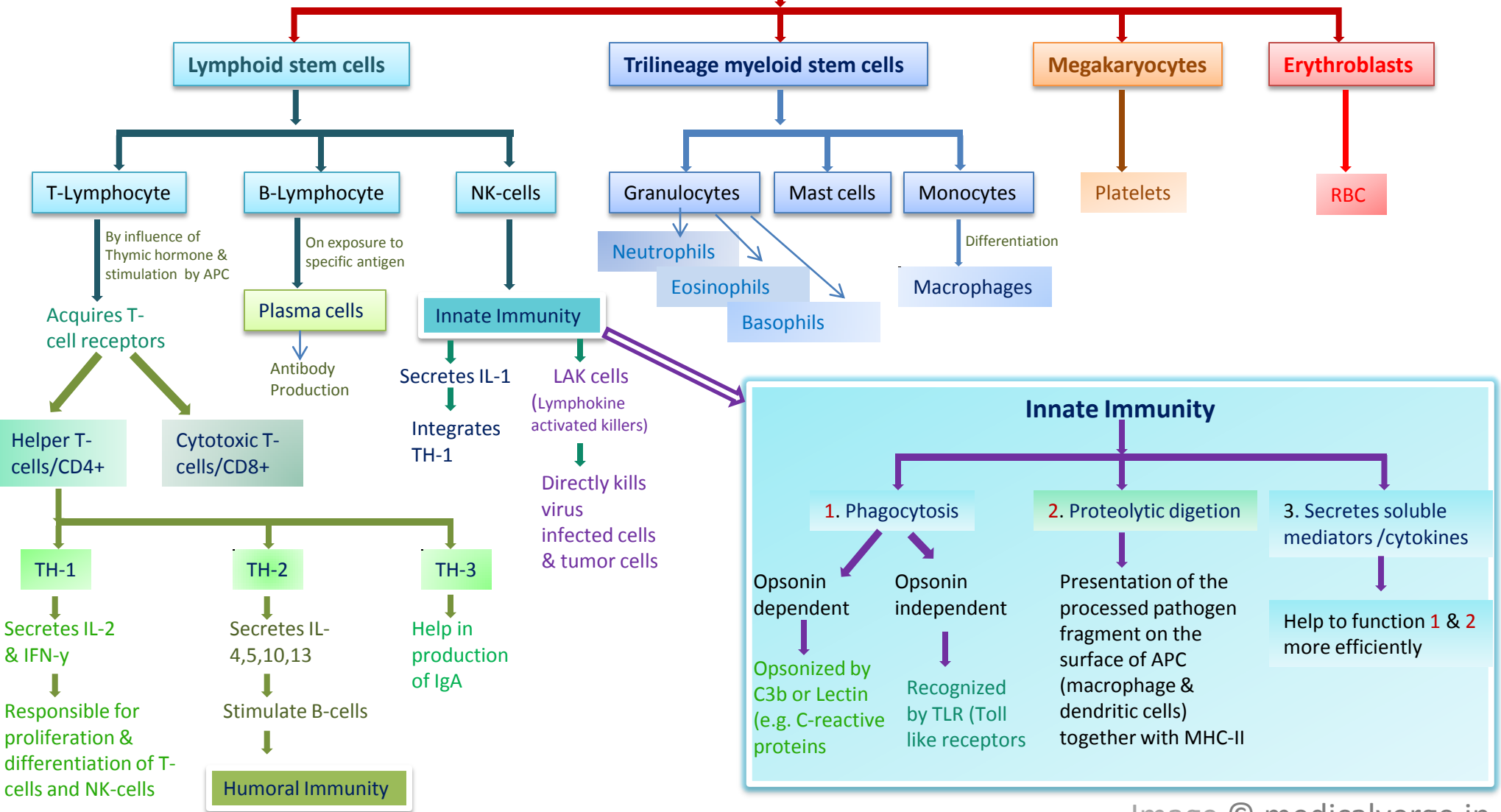


Immune cells formation & differentiation

Pluripotent hematopoietic stem cells

Governed by
 1. Colony stimulating factors (GM-CSF, G-CSF, M-CSF)
 2. IL-3,5,6,7,9,11



Innate Immunity

- 1. Phagocytosis
 - Opsonin dependent
 - Opsonized by C3b or Lectin (e.g. C-reactive proteins)
 - Opsonin independent
 - Recognized by TLR (Toll like receptors)
- 2. Proteolytic digestion
 - Presentation of the processed pathogen fragment on the surface of APC (macrophage & dendritic cells) together with MHC-II
- 3. Secretes soluble mediators /cytokines
 - Help to function 1 & 2 more efficiently