

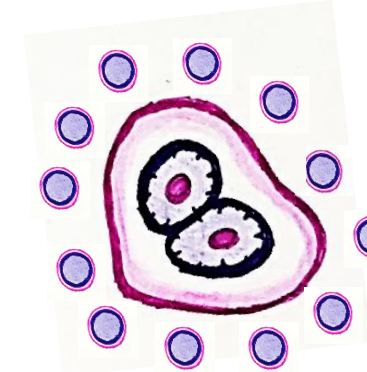
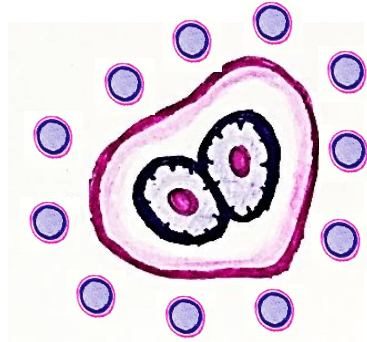
HODGKINS LYMPHOMA -ETIOPATHOGENESIS

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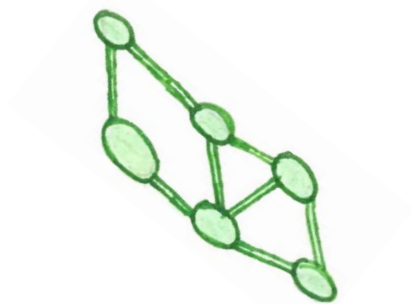
TIRUPATHI



DIFFERENCE BETWEEN LEUKEMIA AND LYMPHOMA

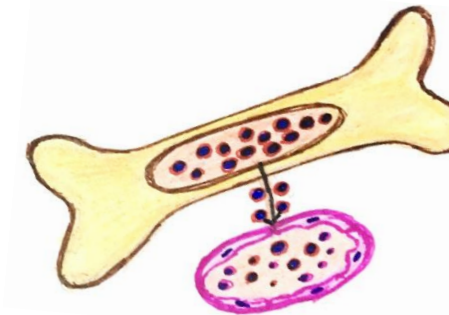
LYMPHOMA

**Solid cohesive tumors of immune system
Where tumor cell proliferation starts in lymph nodes and can involve spleen, bone marrow, thymus and MALT**



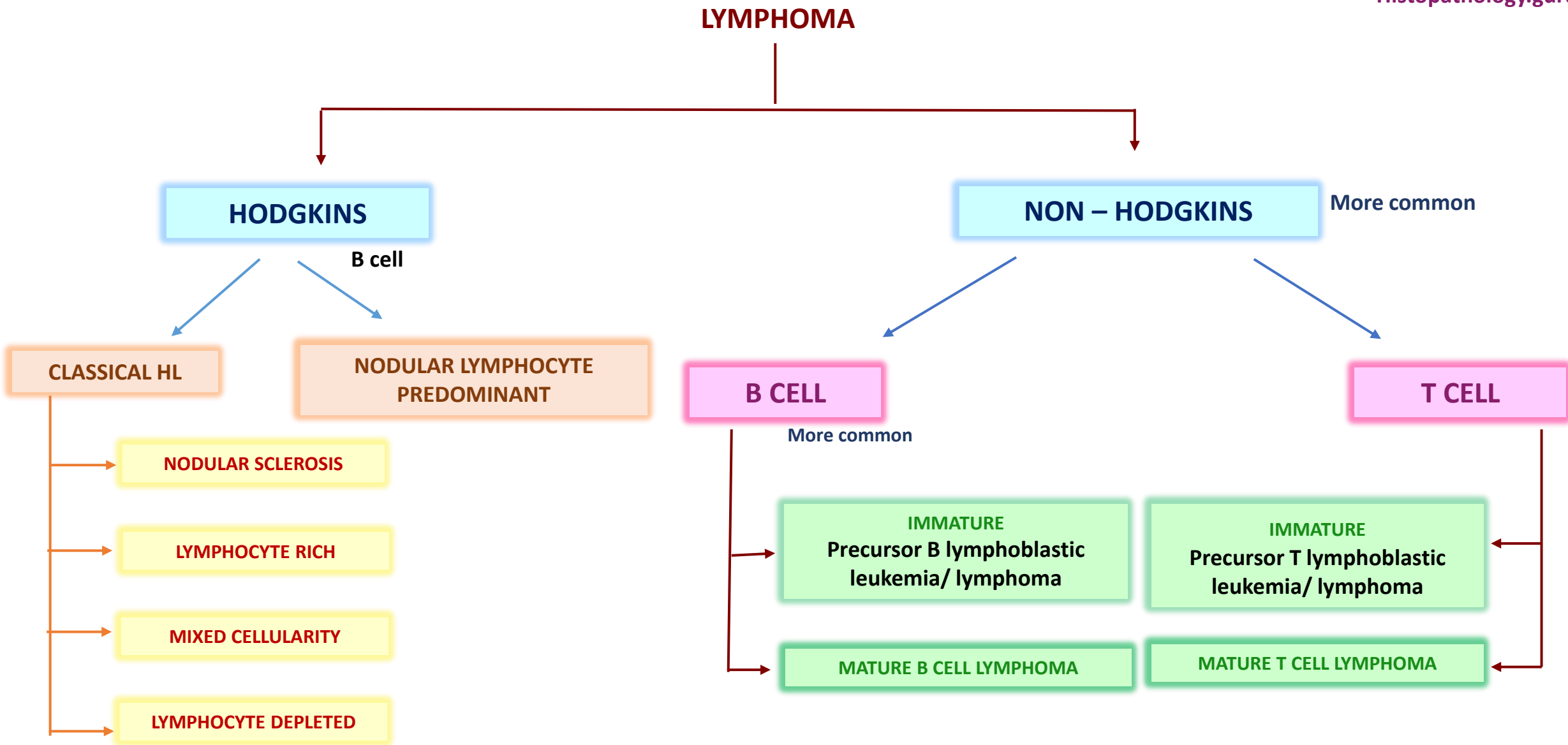
LEUKEMIA

Malignancies of hematopoietic precursor cells where tumor cell proliferation occurs in bone marrow with spill into circulation



- Lymphoma may spill over into blood leading to leukemia
- Leukemias may involve lymph nodes



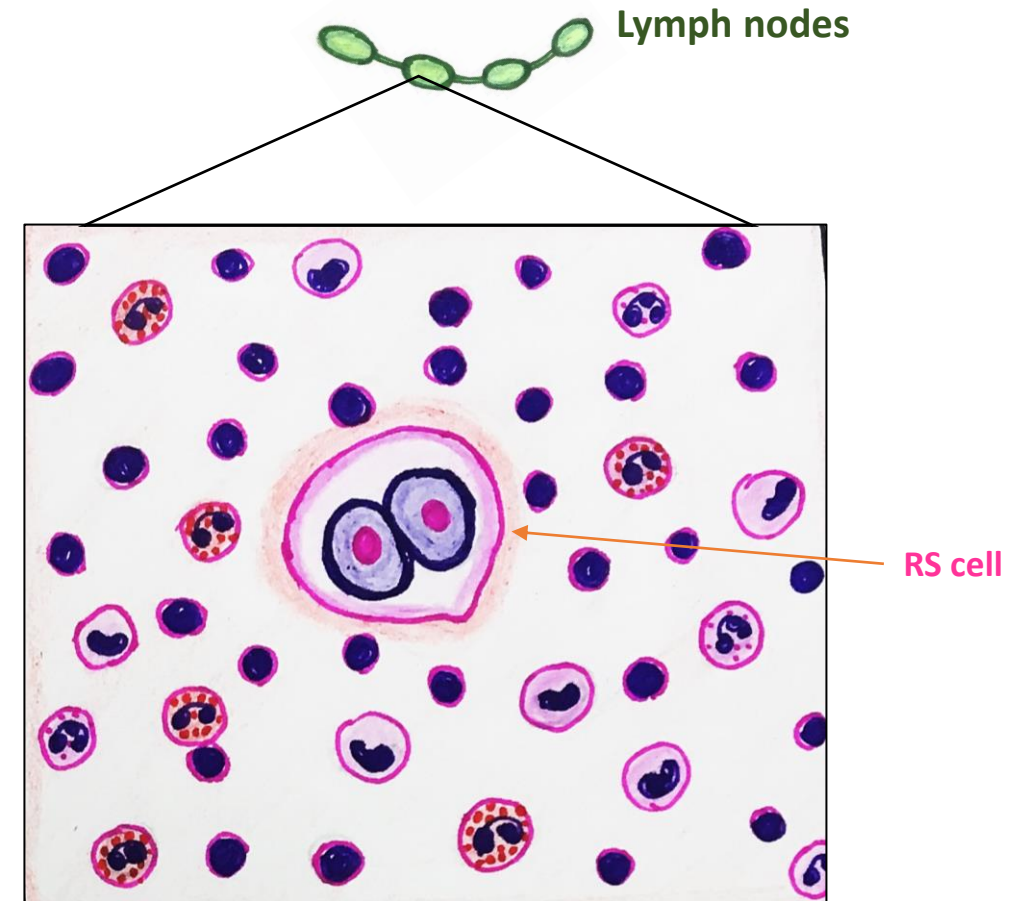


The 4 subtypes of classic forms of HL has RS cells of similar immunophenotype and Lymphocyte predominance subtype has distinctive phenotype that differs from classical type



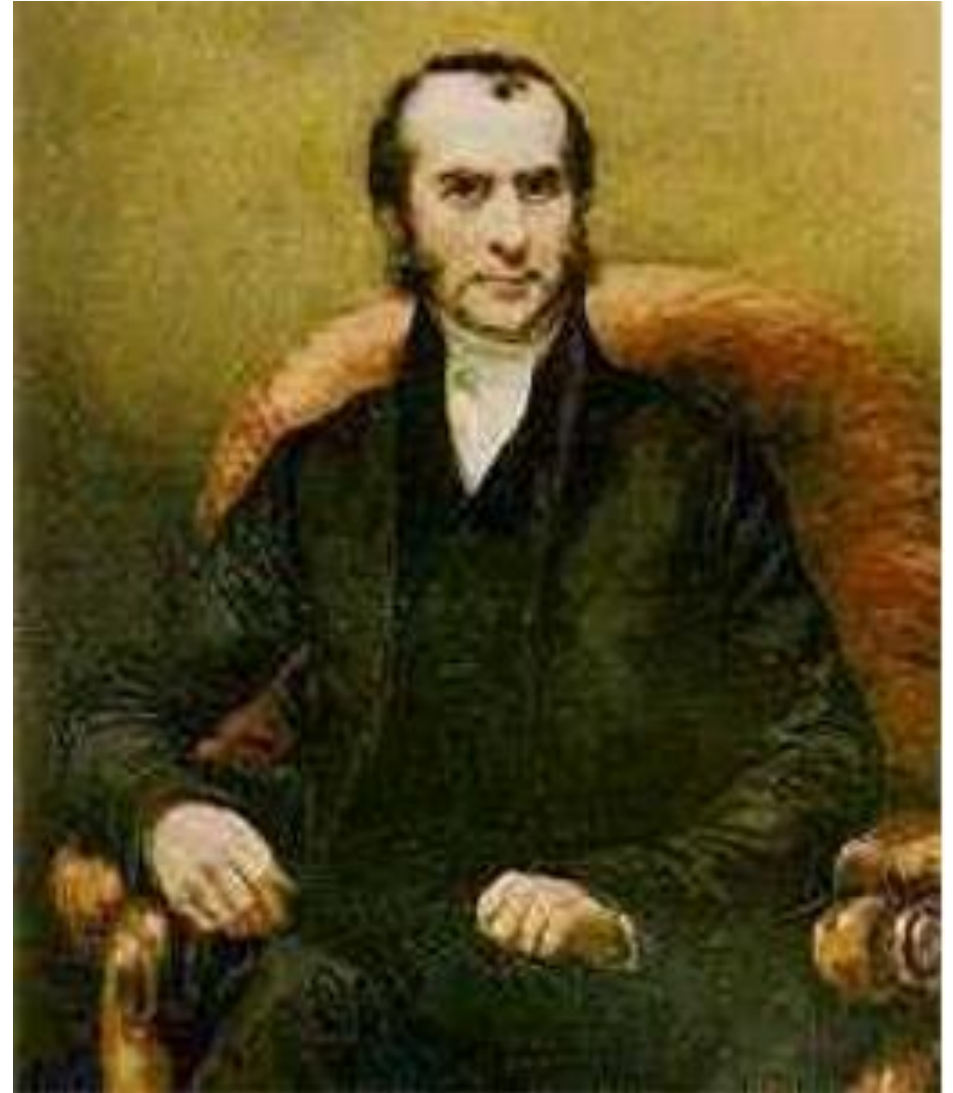
HODGKINS LYMPHOMA

- Disease primarily arises in lymph nodes from B cells and secondarily involves the extra nodal sites
- It is a disease characterized by heterogenous cellularity comprising of majority of non-neoplastic cells with minority of neoplastic cells called Reed-Sternberg cells or Hodgkins cell



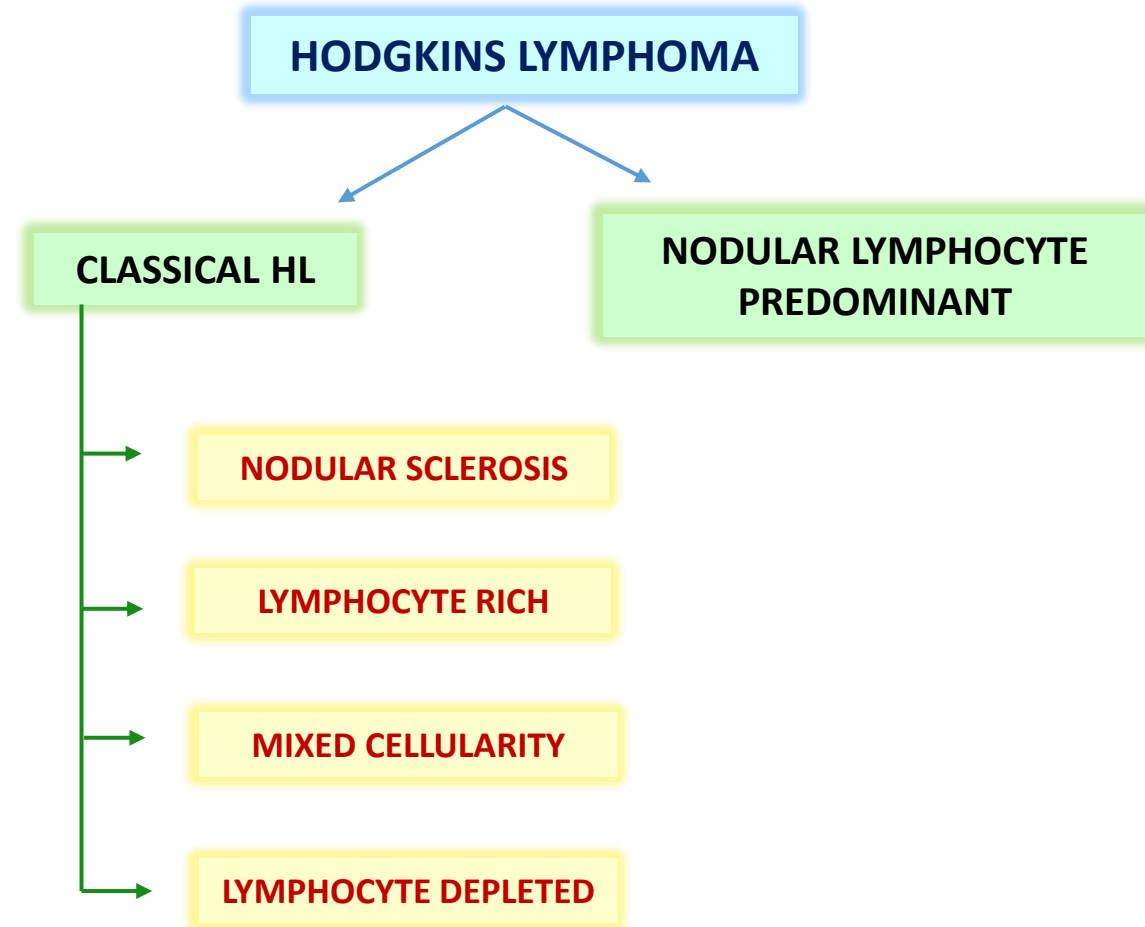
HODGKINS LYMPHOMA

- Hodgkins lymphoma was first described by “**Thomas Hodgkin**” an British physician in 1832
- Studied 7 patients with painless lymphnode enlargement in Guys Hospital, London.



HODGKINS LYMPHOMA

- Hodgkins lymphoma was classified depending upon
 - Type of RS cell
 - Lymph node architecture
 - Composition of non neoplastic reactive infiltrate



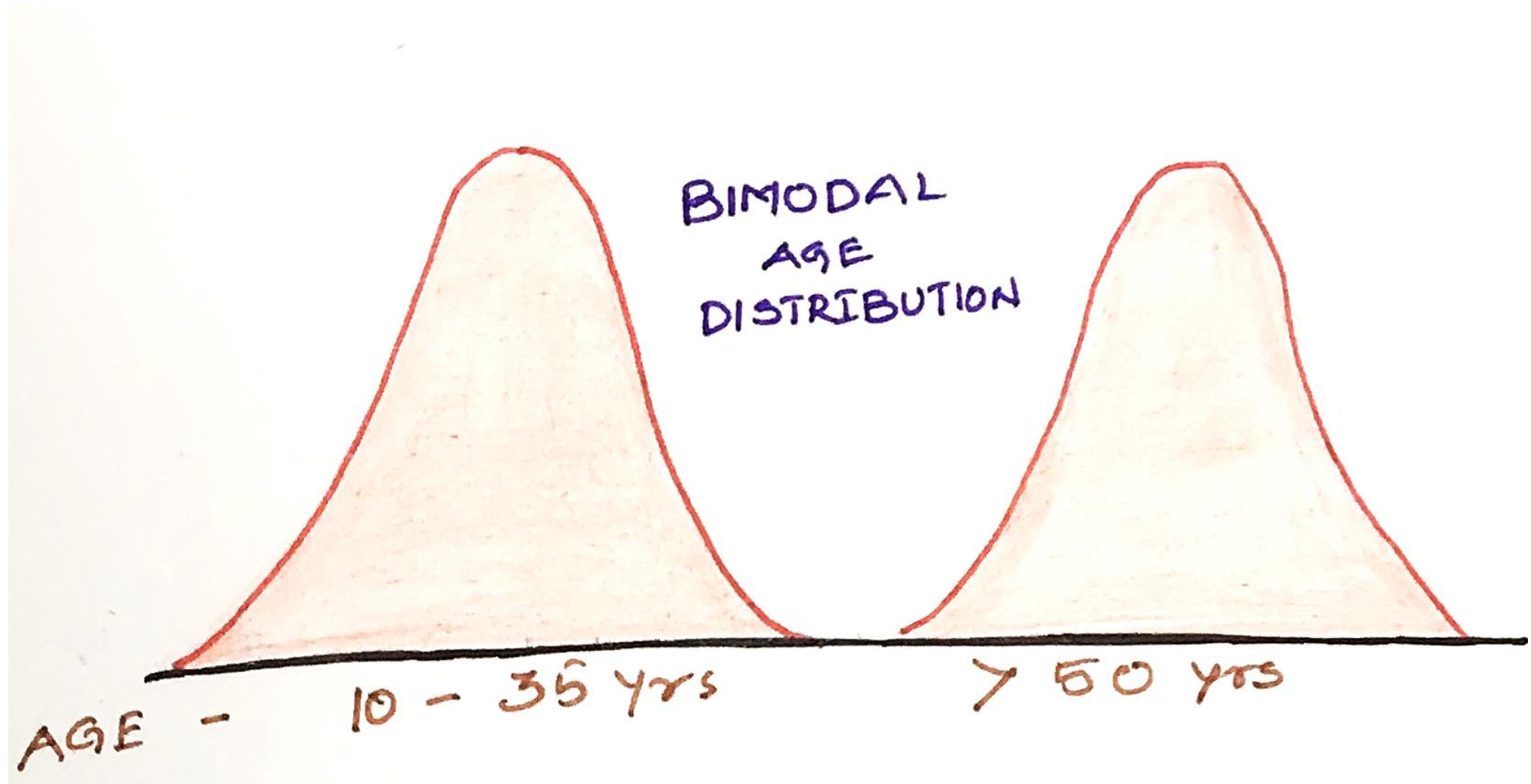
HODGKINS LYMPHOMA

Characteristic features of Hodgkins lymphoma are (WHO)

- Most commonly involves cervical lymphnodes
- Occurs mostly in young adults
- Lesion consists of predominantly of non neoplastic cells admixed with few mononucleated or multinucleated tumor cells
- Tumor cells are often ringed by T lymphocytes in a ring like manner



HODGKINS LYMPHOMA



Incidence is same in both men and women

more common in men than women



HODGKINS LYMPHOMA

PATHOGENESIS

Environmental, possibly infectious agent EBV



Activation of transcription factor NF- κ B



Prevents the apoptosis of crippled germinal center B cells
that cannot express Immunoglobulins

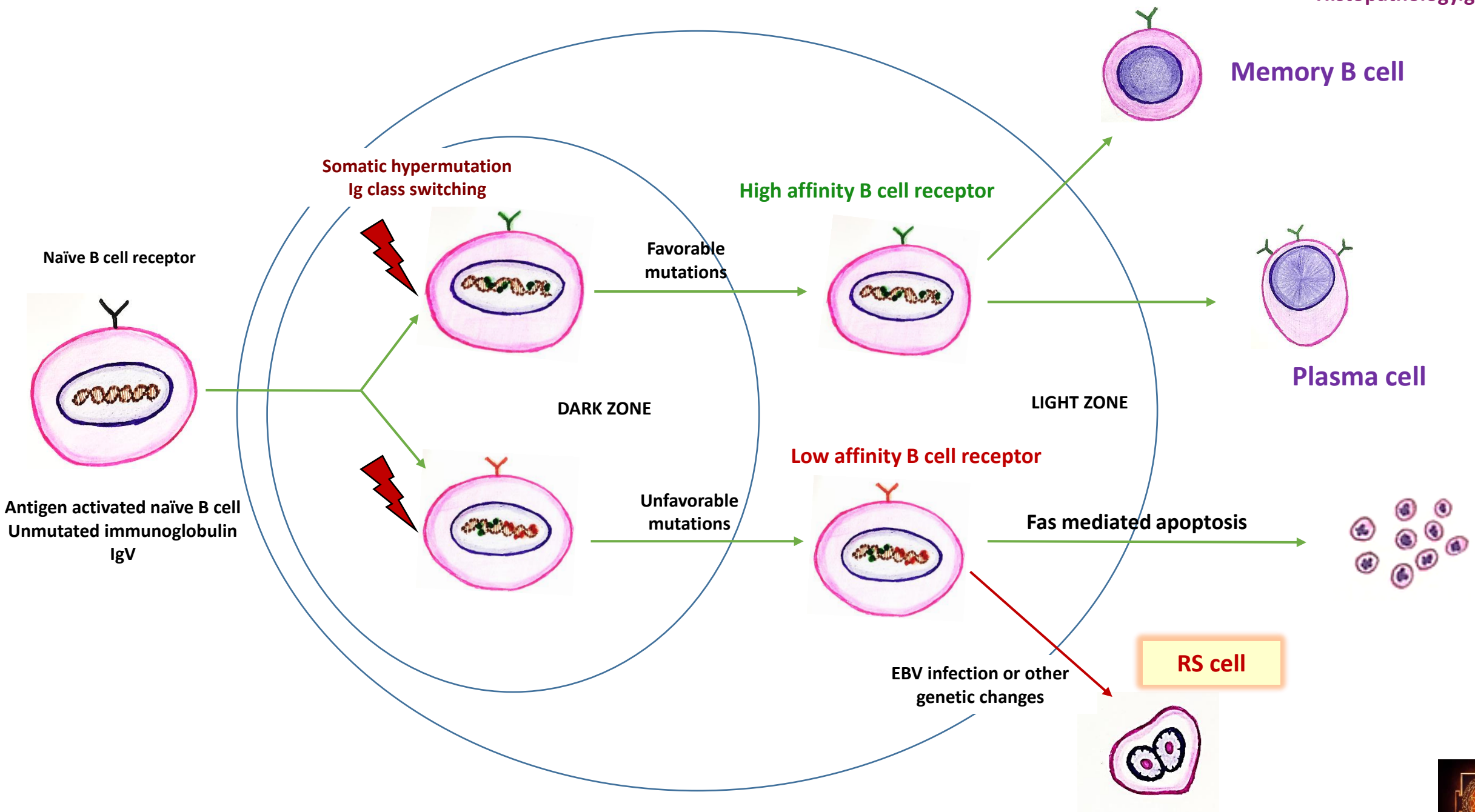


Acquire other unknown mutations

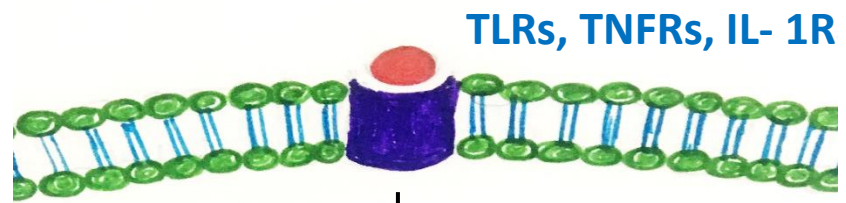
REED-STERNBERG CELLS

NF- κ B – Nuclear factor Kappa light chain enhancer of activated B cells

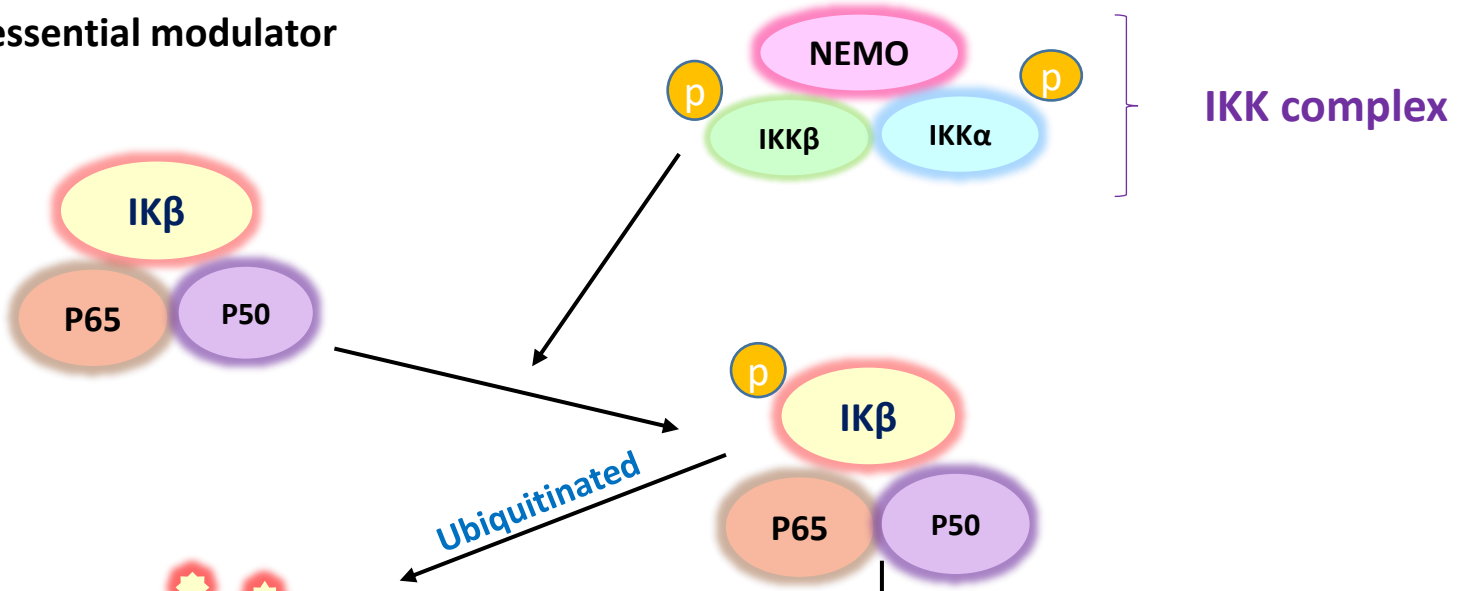




Canonical pathway



NEMO – NF-kβ essential modulator

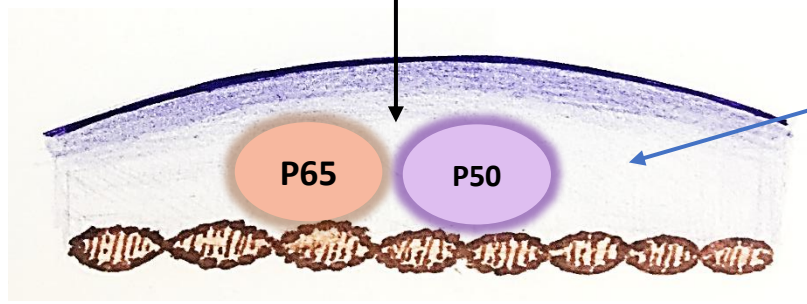


Receptors + ligands
↓
Activation of signaling pathway

Phosphorylation of IKK complex

Phosphorylation and ubiquitination of Iκβ leading to degradation

Release of NF-kβ which translocates into the nucleus



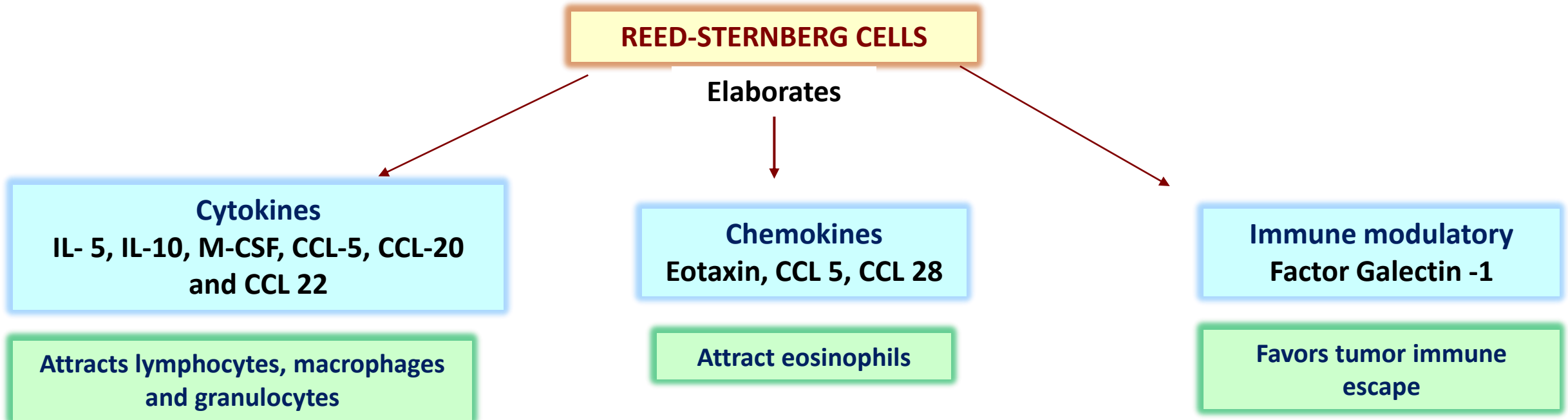
- Inflammation
- Immune response
- Cell survival
- Cell Proliferation
- apoptosis

Target gene expression like cytokine, chemokine and other gene expression

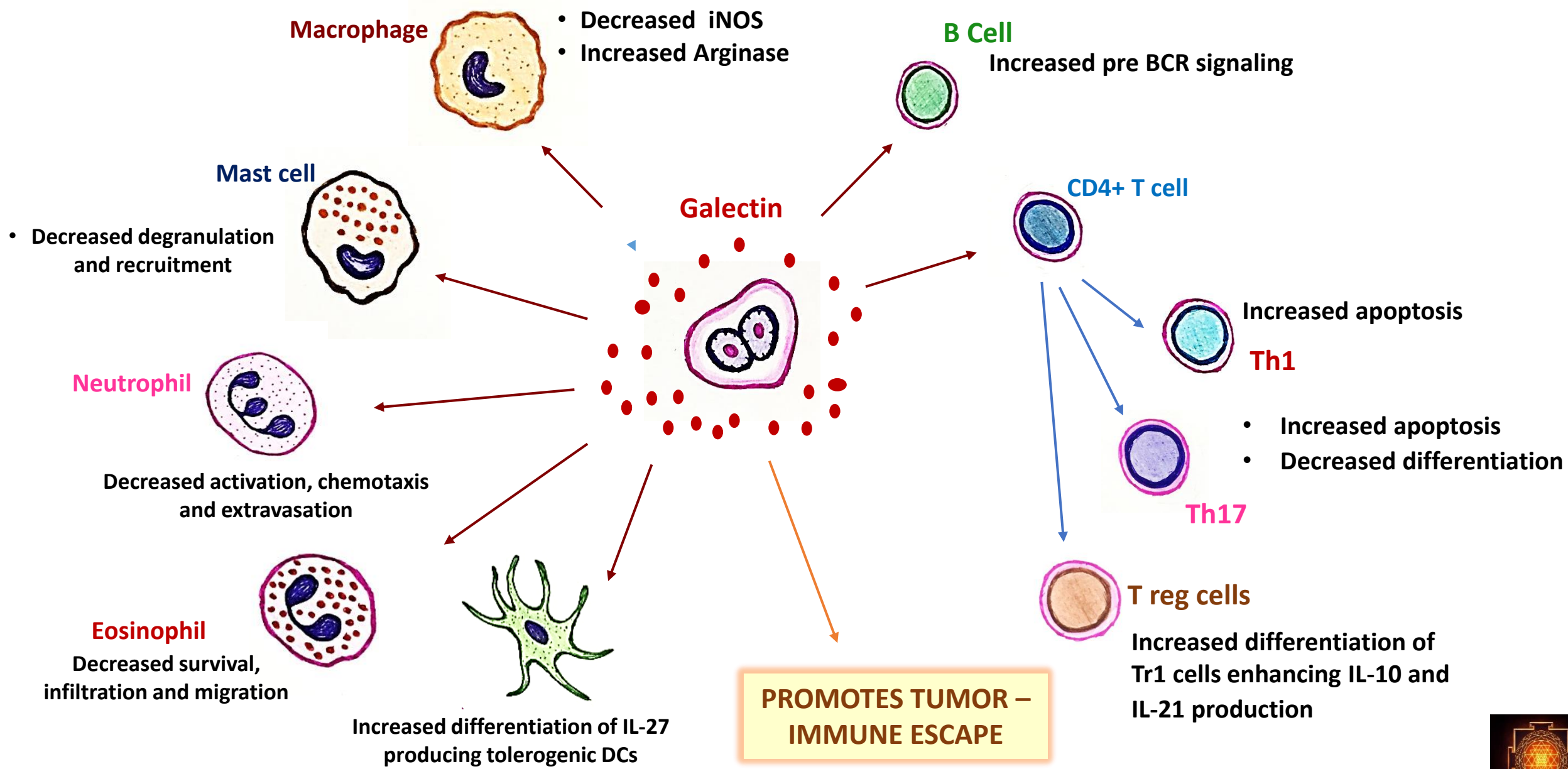


HODGKINS LYMPHOMA

PATHOGENESIS



EFFECT OF GALECTIN ON IMMUNE CELLS



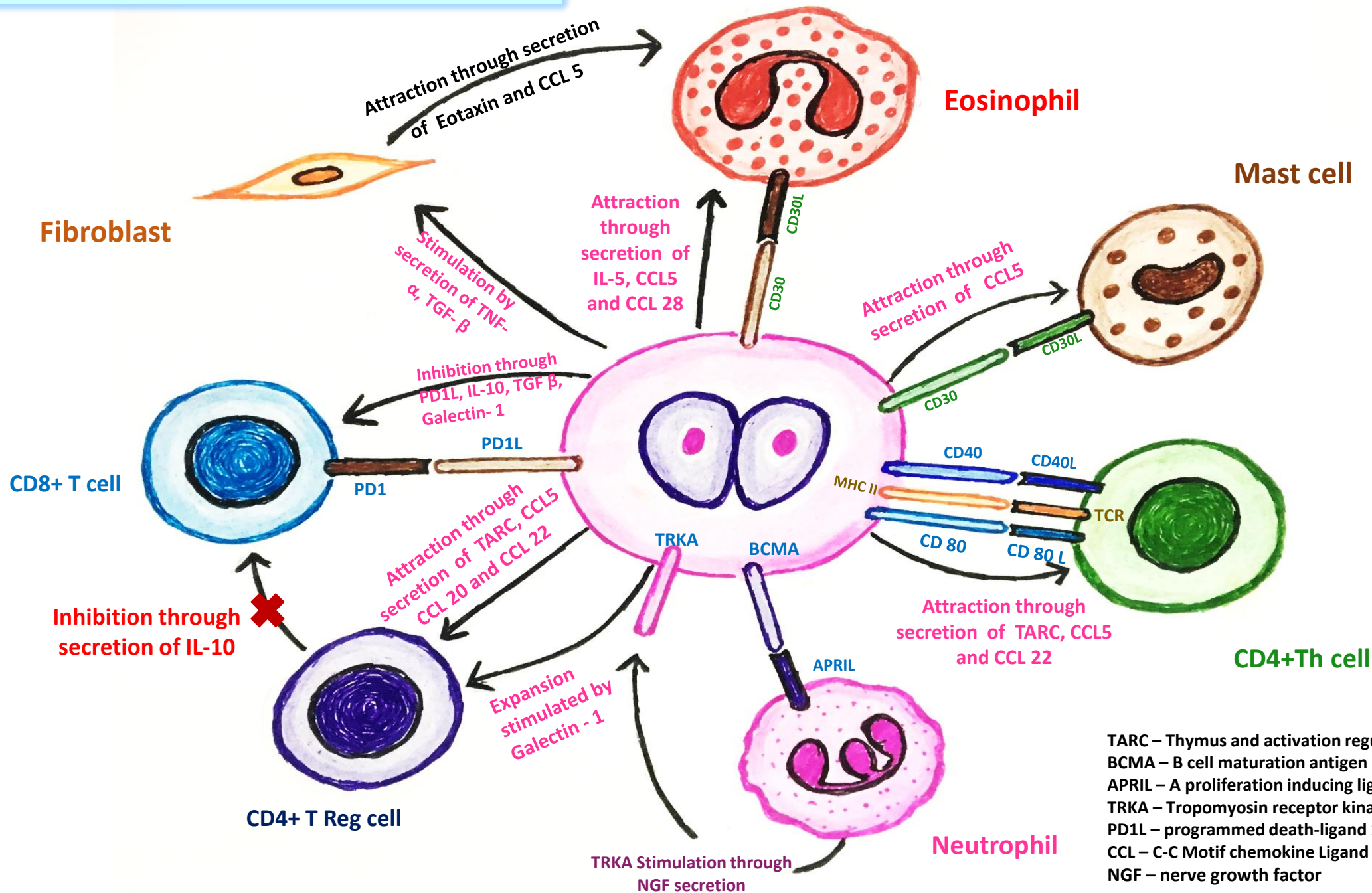
HODGKINS LYMPHOMA

PATHOGENESIS

- Eosinophils and T cells express ligands that activate CD 30 and CD 40 receptors found on RS cells, producing signals that up-regulate NF- κ B
- RS cells are aneuploidy and has diverse clonal aberration
- Most common aberration is – gain in REL proto oncogene on chromosome 2p which increases the NF- κ B activity

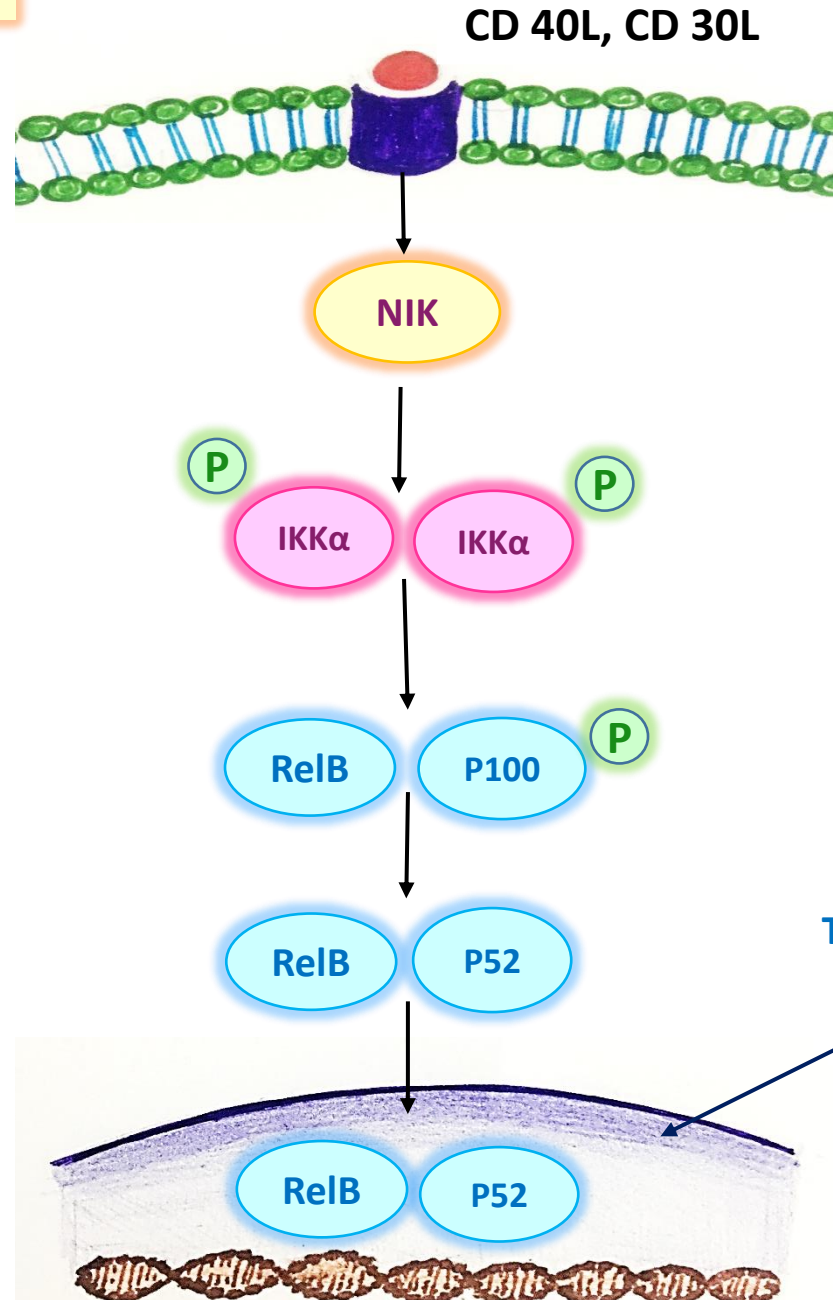


Interaction of RS cell with other inflammatory cells

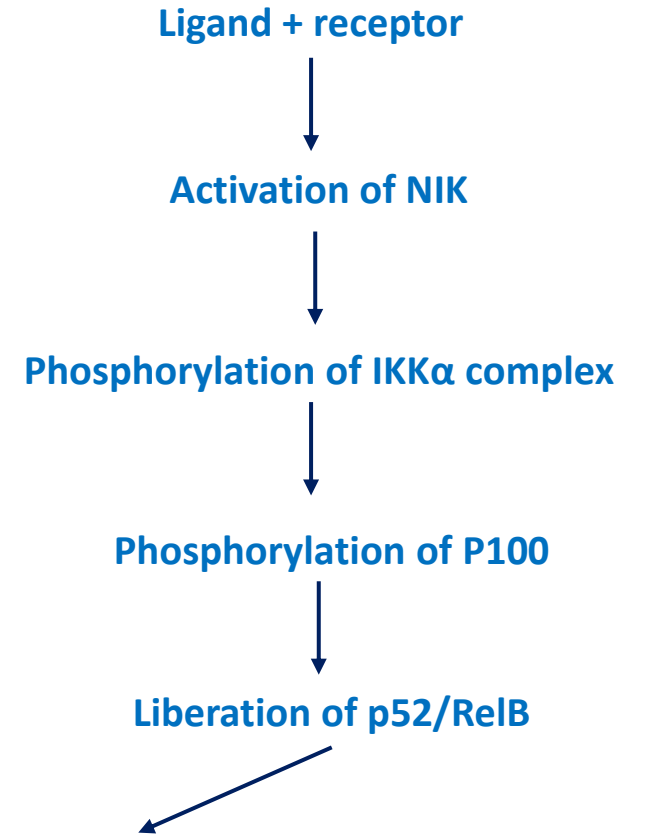


TARC – Thymus and activation regulated chemokine
 BCMA – B cell maturation antigen
 APRIL – A proliferation inducing ligand
 TRKA – Tropomyosin receptor kinase A
 PD1L – programmed death-ligand 1
 CCL – C-C Motif chemokine Ligand 5
 NGF – nerve growth factor





NIK – Nf-κβ inducing kinase



Translocation into nucleus and binding to DNA

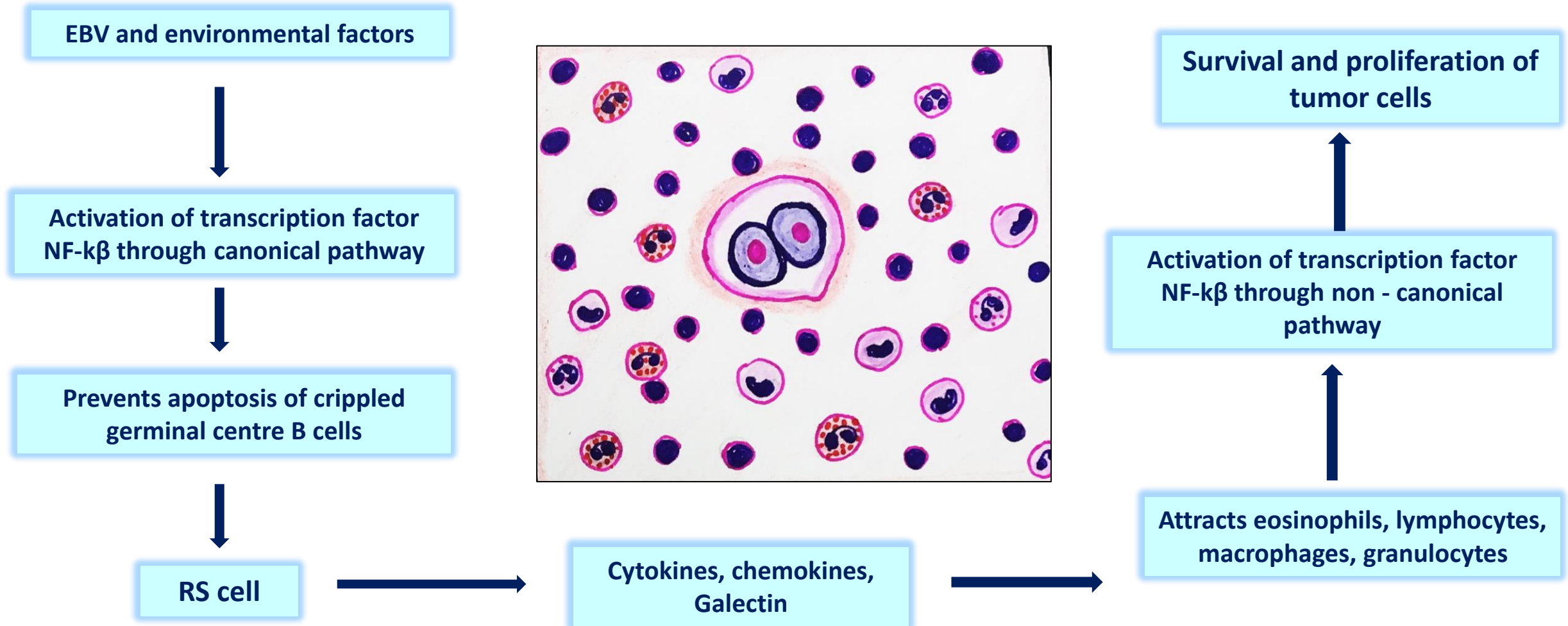
Target gene expression like cytokine, chemokine and other gene expression

- Inflammation
- Immune response
- Cell survival
- Cell Proliferation
- apoptosis



SUMMARY – HODGKINS LYMPHOMA ETIOPATHOGENESIS

Hodgkins lymphoma – arises in LN and composed of majority of non- neoplastic cells + minority of neoplastic RS cells



Thank
you!

