

B Lymphocytes and Autoimmune Diseases

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Introduction

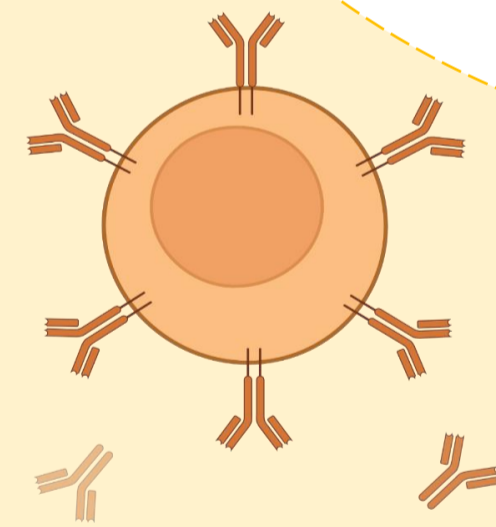
A type of white blood cell which play an important role in human immune system[1]:

B Cell
B Lymphocytes

- Antibody Production
- Immune Memory
 - Memory B cell
- Transform into plasmacytes
 - Plasma cell
- Collaborate with T cells

Autoimmunity[2]

Abnormal B- and T-cell recognition of self-antigens



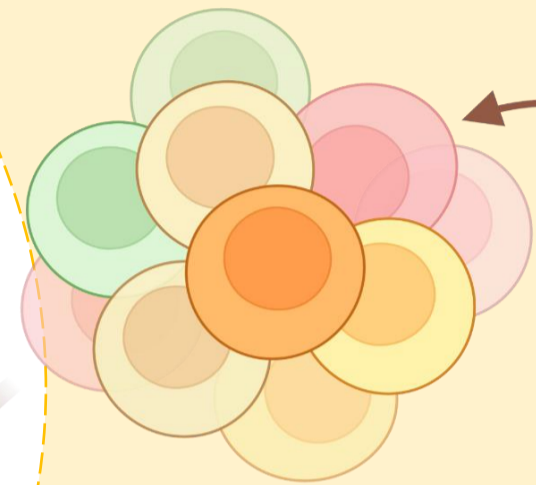
B cell releasing autoantibodies

Attacking healthy cells and causing cells death

Pathogenesis[2]

Lymphoid progenitor cells

Bone Marrow



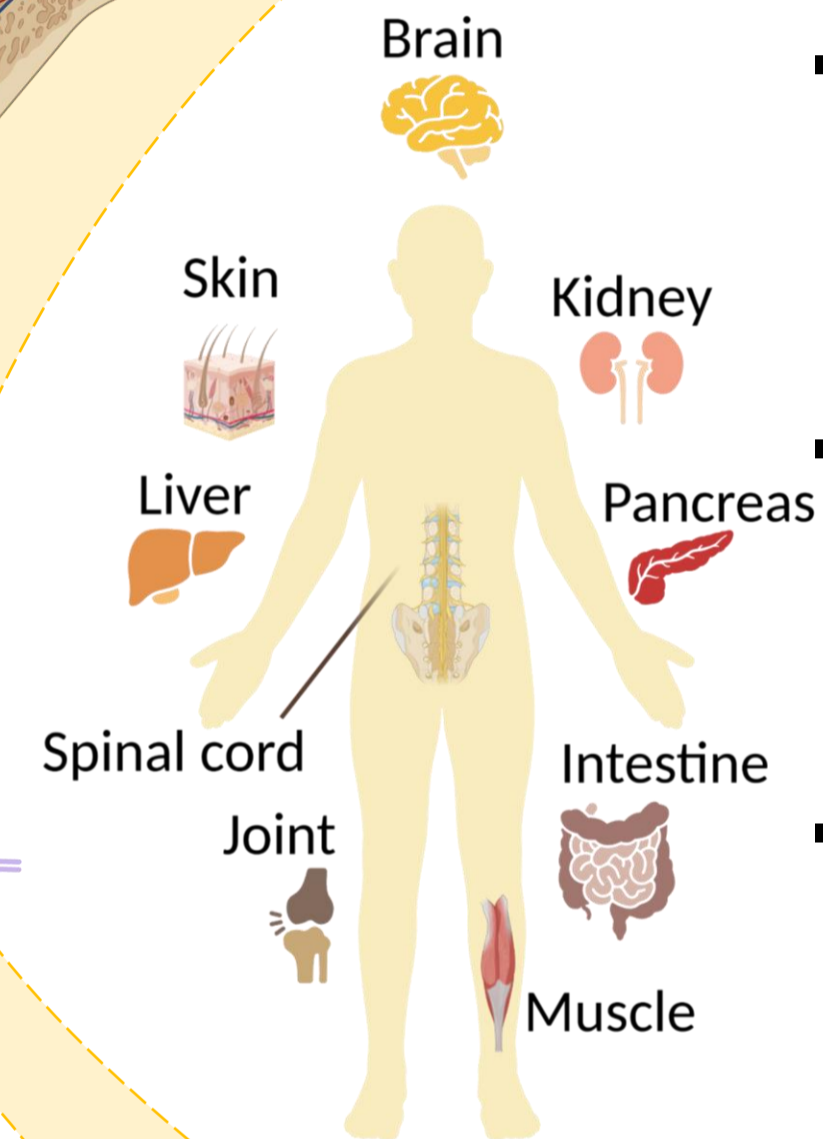
B Cell



- ❑ Autoantibody Production
 - Autoantibodies would target body's own cells and tissues
- Loss of B cell tolerance
- Increase level of autoantibodies
- ❑ Cytokine production
 - Regulate T-cell function and inflammation

Autoimmune Diseases

- **Rheumatoid arthritis**
 - Chronic inflammation of the joint capsule and synovial membrane
- **Multiple sclerosis**
 - Damage the myelin sheet of nerve cell mainly in brain and spinal cord
- **Systemic sclerosis**
 - Excessive collagen deposition in the skin, lung and other visceral organ
- **Type 1 diabetes**
 - Pancreatic β cells being attacked



References

[1] Dörner, T., Jacobi, A.M. & Lipsky, P.E. B cells in autoimmunity. *Arthritis Res Ther* 11, 247 (2009).

<https://doi.org/10.1186/ar2780>

[2] Yanaba K, Bouaziz JD, Matsushita T, Magro CM, St Clair EW, Tedder TF (June 2008). "B-lymphocyte contributions to human autoimmune disease". *Immunological Reviews*. 223 (1): 284–299. <https://doi.org/10.1111/j.1600-065X.2008.00646.x>

All graphics produced by BioRender.