



Preclinical Models of Experimental Allergic Encephalomyelitis (EAE)

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Experimental Allergic Encephalomyelitis (EAE)

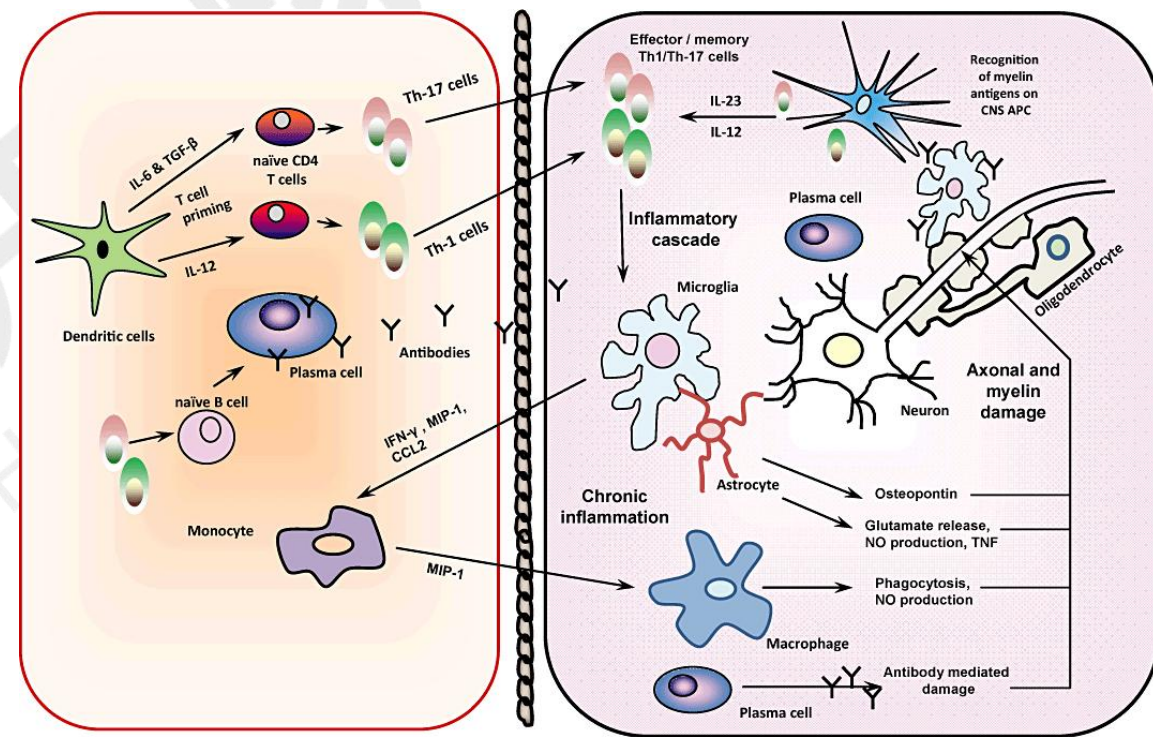
Symptoms and Causes

Despite many years of intensive research, multiple sclerosis (MS) defies understanding and treatment remains suboptimal. The prevailing hypothesis is that MS is immune mediated and that experimental allergic encephalomyelitis (EAE) is a suitable model to elucidate pathogenesis and devise therapy. Multiple sclerosis (MS) is a potentially disabling disease of the brain and spinal cord (central nervous system).

It's considered an immune mediated disease in which the body's immune system attacks its own tissues. In the case of MS, this immune system malfunction destroys the fatty substance that coats and protects nerve fibers in the brain and spinal cord (myelin).

Models in place:

- **MOG Induced CR-MS Model**
- **PLP Induced RR-MS Model**
- **SP-MS Mouse Model**
- **MBP Induced Lewis EAE Model**
- **SP-MS Rat Model**
- **MOG¹⁻¹²⁵ Induced B cell dependent EAE Model**



<https://doi.org/10.1111/j.1476-5381.2011.01302.x>

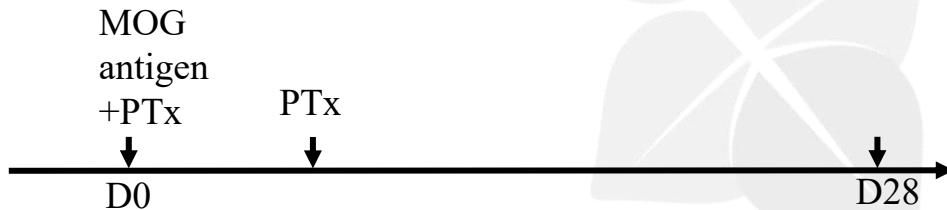
MOG Induced CR-MS Model

■ Mechanism

EAE is primarily used as an animal model of autoimmune inflammatory diseases of the CNS, and it resembles MS, the prototypical such disease, in many respects.

Active EAE is induced by immunization with CNS tissue or myelin peptides, such as myelin basic protein (MBP) and proteolipid protein (PLP) in CFA, with high incidence of disease induced in susceptible animal strains.

■ MOG antigen+PTx Induced EAE Model



Animal	C57BL/6
Evaluation	Clinical: Body weight, clinical score
	Cytokine&cell: IL-17, Th1
	Pathology: spinal cord HE & fast blule

MOG Induced CR-MS Model

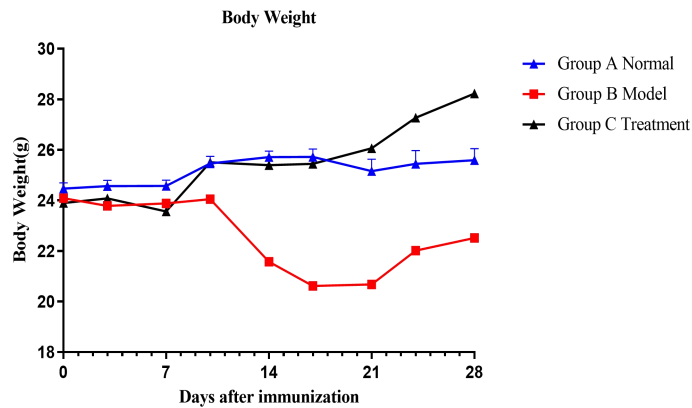


Fig 1. Body Weight

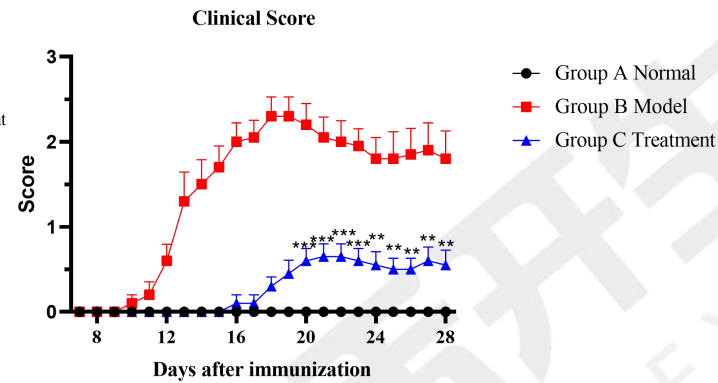


Fig 2. Clinical Score

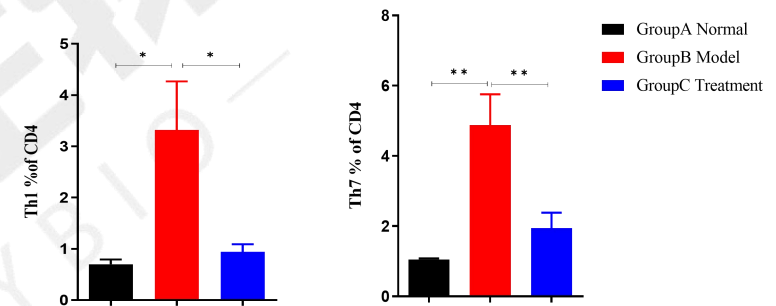


Fig 3. Cellular level (CNS)

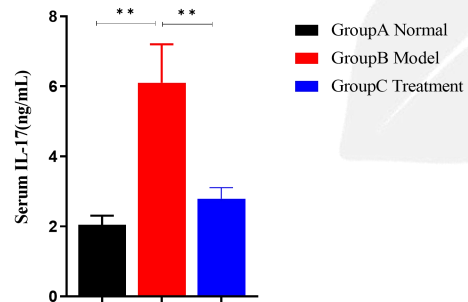


Fig 4. Molecular level (serum)

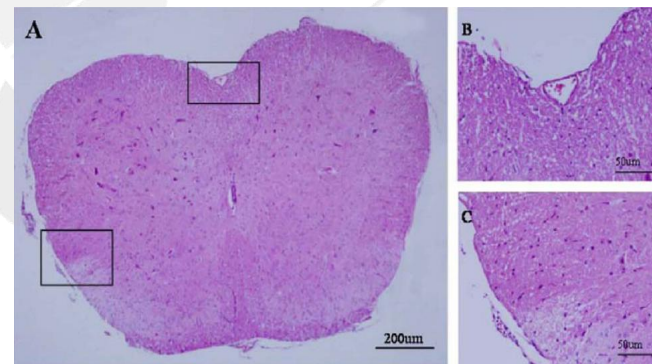


Fig 5. Model HE (spinal cord)

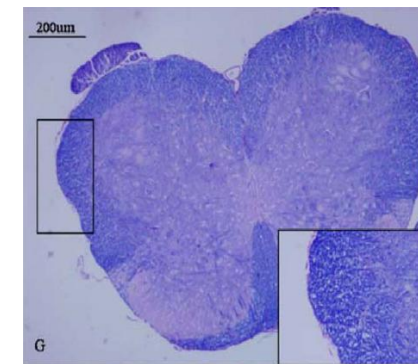


Fig 6. Model Luxol fast blue (spinal cord)

PLP induced RR-MS Model

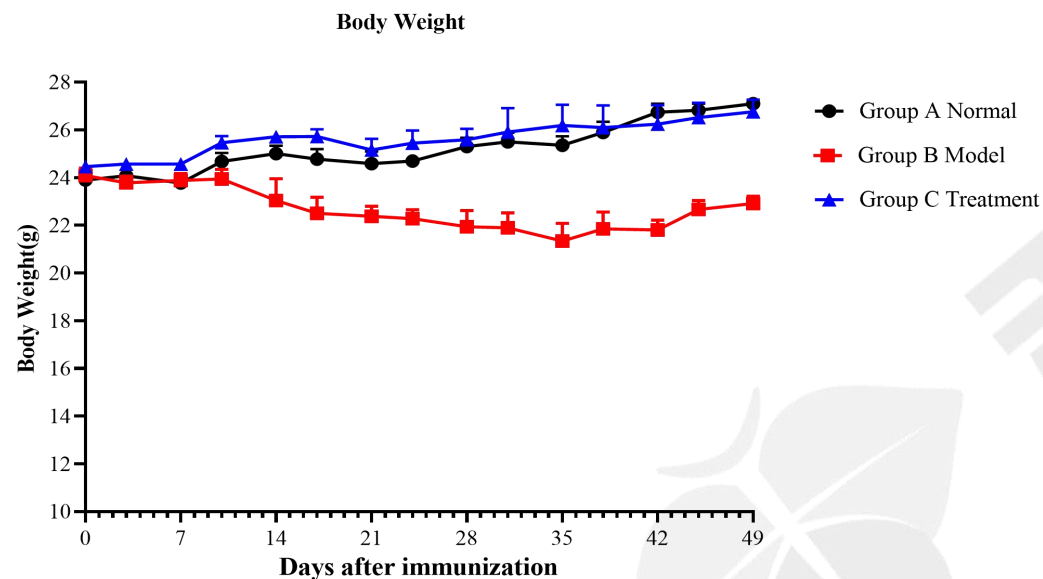


Fig 1. Body Weight

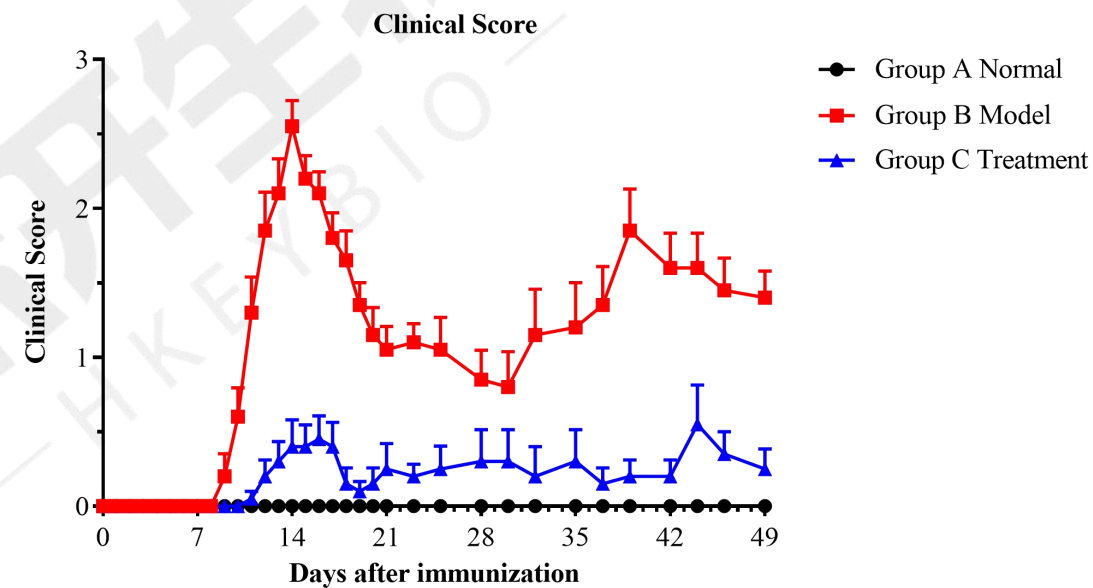


Fig 2. Clinical Score

SP-MS Mouse Model

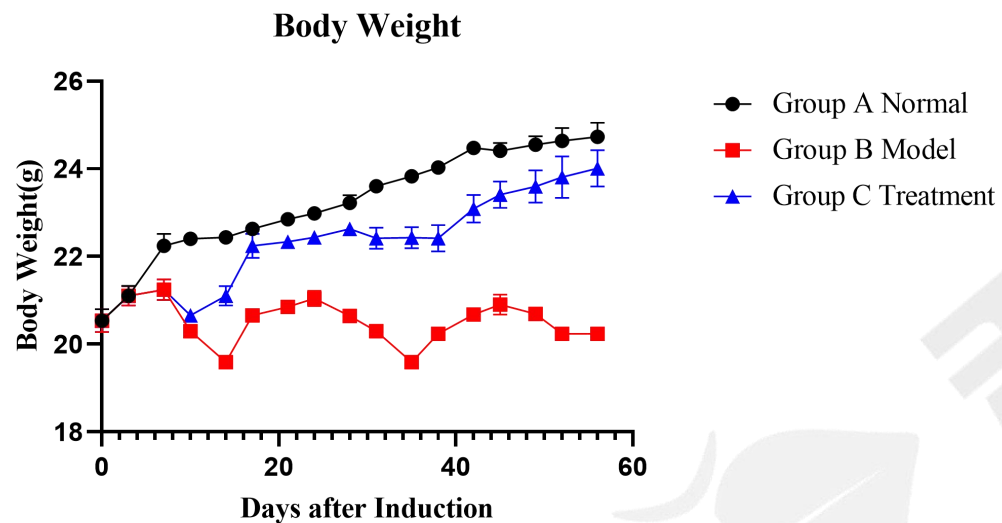


Fig 1. Body Weight

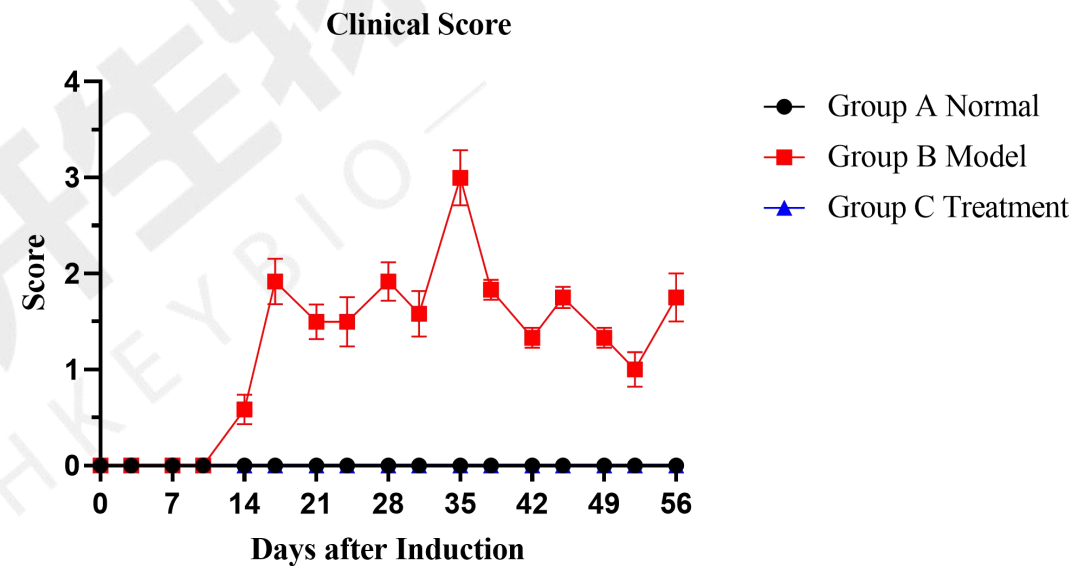


Fig 2. Clinical Score

MBP Induced Lewis EAE Model

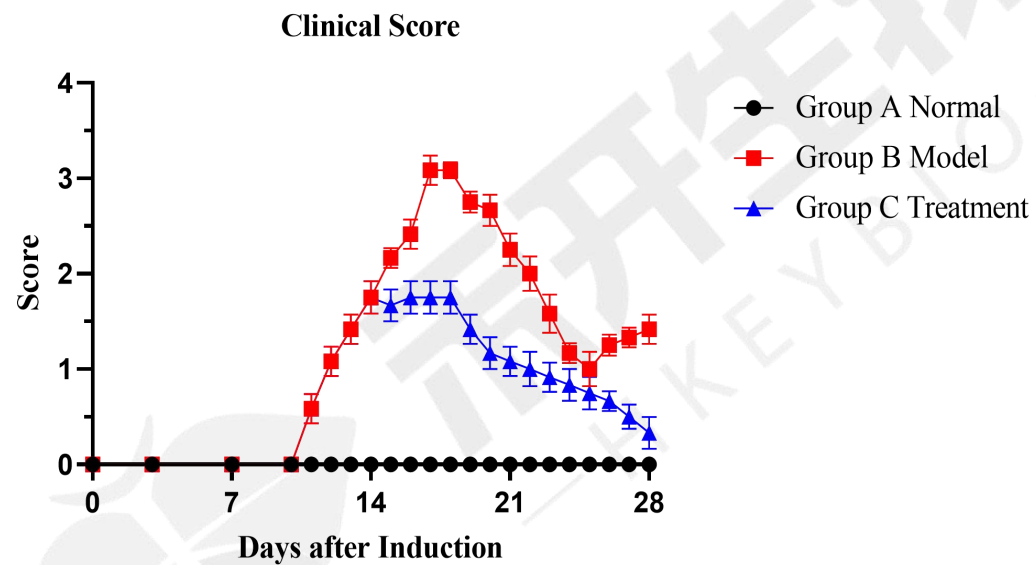


Fig 1. Clinical Score

SP-MS Rat Model

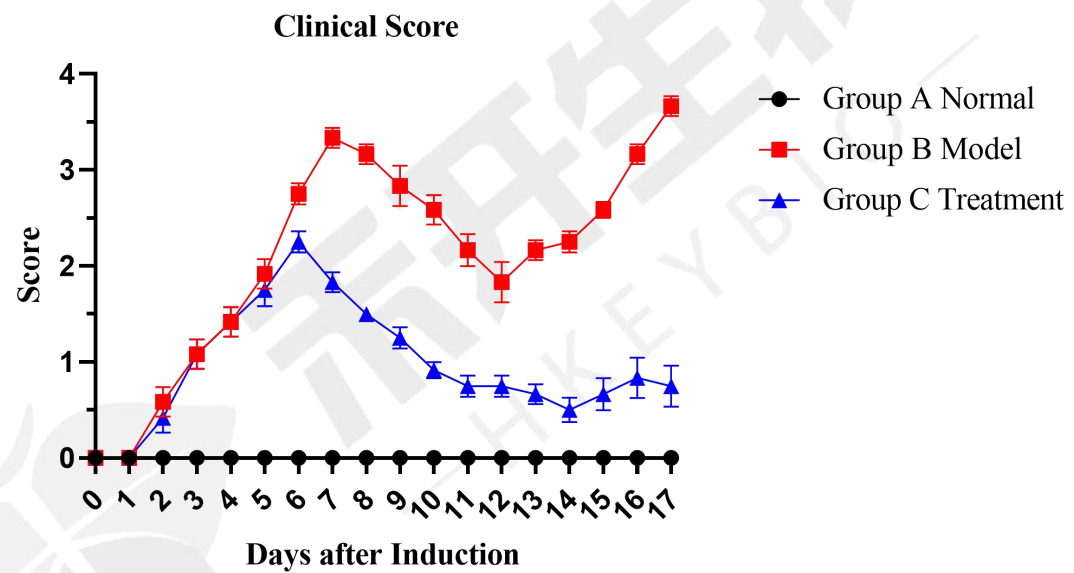


Fig 1. Clinical Score

MOG¹⁻¹²⁵ Induced B cell dependent EAE Model

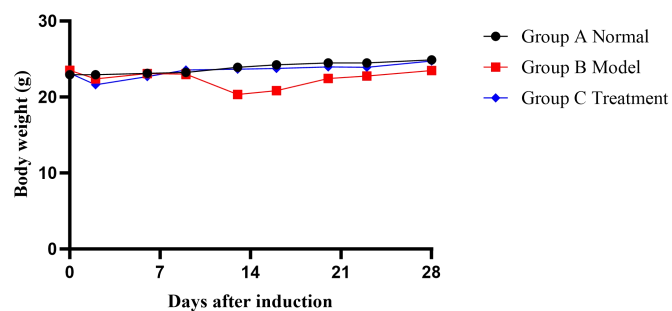


Fig 1. Body Weight

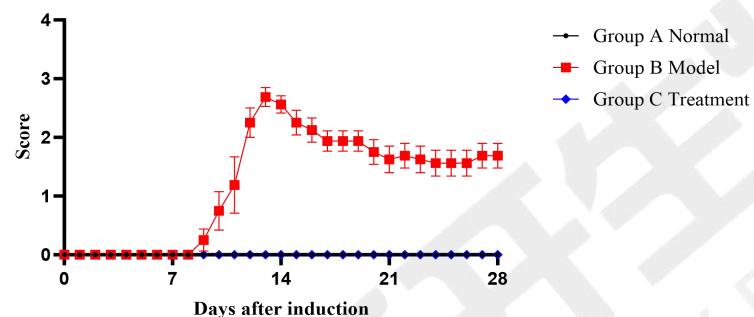


Fig 2. Clinical Score

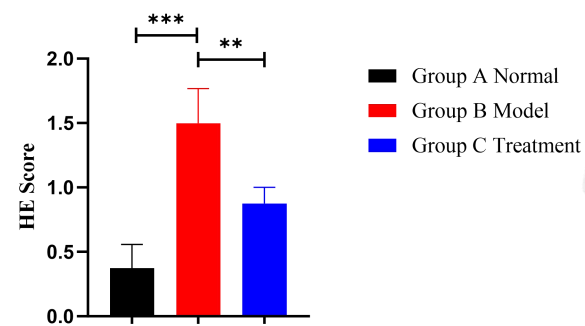
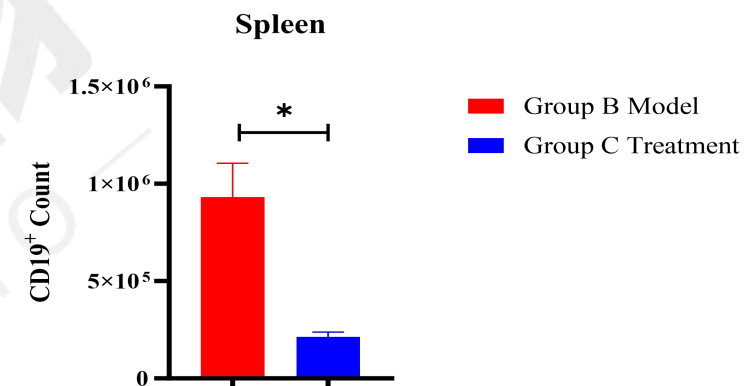


Fig 3. HE Score

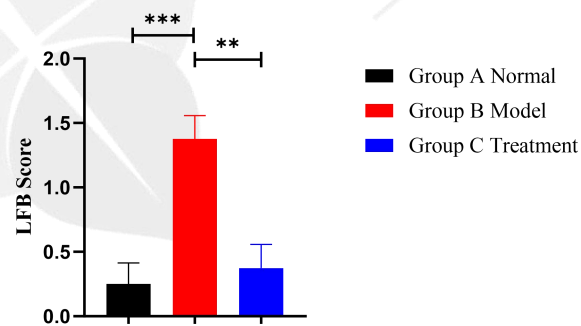


Fig 4. LFB Score

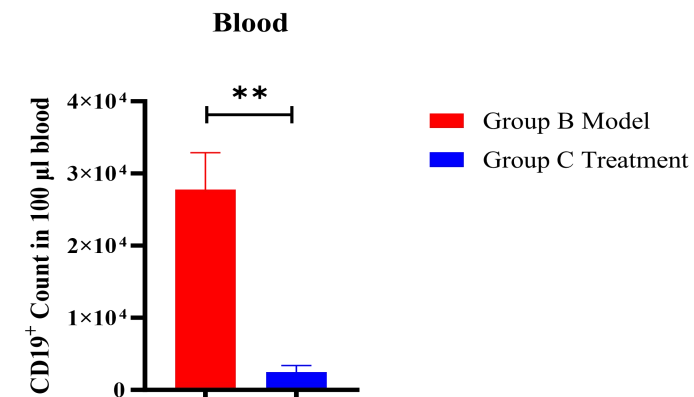


Fig 5. B cell depletion



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