



# Reticuloendothelial System

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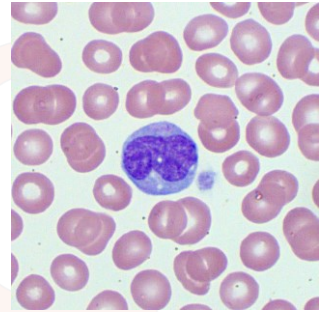
## Reticuloendothelial System

- 💡 **Reticuloendothelial System** is a collection of the cells having phagocytic properties, so known as Phagocytic System located in all tissues
- 💡 They are also known as:
  - 💡 Monocytic-Macrophage System
  - 💡 Mononuclear Phagocytic System
  - 💡 Lymphoreticular System
- 💡 RES consist of-
  - 💡 Monocyte
  - 💡 Mobile Tissue Macrophages
  - 💡 Fixed Tissue Macrophages

## Reticuloendothelial System

### 1. MONOCYTES

- Largest Leucocytes (WBC)
- A immature cells present in blood with little phagocytic action, after 72 h they enter the tissues to become **'tissue macrophage'**
- In the tissues cytoplasm, they become larger and contains lysosomes (filled with lysoymes)
- Functions:
- Phagocyte several bacteria.
- Engulf large particulate matter, dead tissue cells and senile cells.
- Along with macrophage involved in phagocytosis & destruction of necrotic material.
- Co-operate with B & T lymphocyte in both Humoral & Cellular immunity



## Reticuloendothelial System

### 1. Mobile (Wandering) Tissue Macrophages

- Recently Leaving monocyte from blood into tissue are reffered as **Mobile (Wandering) Tissue Macrophages**
- Monocyte changes during maturation:
  - A. Increase in cell size
  - B. Number and complexity of intracellular organelles increase, i.e., Golgi, mitochondria, lysosomes
  - C. Increase in intracellular digestive enzyme

## Reticuloendothelial System

### 1. Fixed Tissue Macrophages

#### 🔦 Mature Macrophages found in tissues

- 🔦 Liver- Kupffer cells
- 🔦 Lungs- Alveolar macrophages
- 🔦 Skin- Langerhans cells
- 🔦 Connective tissue- Histiocytes
- 🔦 CNS- Microglia
- 🔦 Bones- Osteoclasts
- 🔦 Spleen/Bone marrow/Lymph nodes- Reticular or  
Dendritic cells

## Reticuloendothelial System

### 1. Fixed Tissue Macrophages

#### 🔦 Functions

- 🔦 Phagocytosis & Defence system
- 🔦 Digestion of inorganic particulate matter (carbon & dust particles).
- 🔦 **"Multinucleated Giant Cell"** (fused macrophages) destroy the large insoluble particle
- 🔦 Organic foreign matter such as thorn, fish bone are destroyed by enzyme action & lysis.
- 🔦 Engulf micro-organism, senile WBC, RBC, tissue debris & some parasites.
- 🔦 Help 'T' & 'B' lymphocyte in the acquired immunity by presenting antigens

## Reticuloendothelial System

### Functions of RES

- 🔦 Phagocytosis & Defence system
- 🔦 Destruction of senile RBCs
- 🔦 Storage and Metabolism of Iron'
- 🔦 Formation of Bile Pigments

Pharmacology Concepts  
By Rajesh Choudhary



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