

# MODULE 2 L06

# Platelets

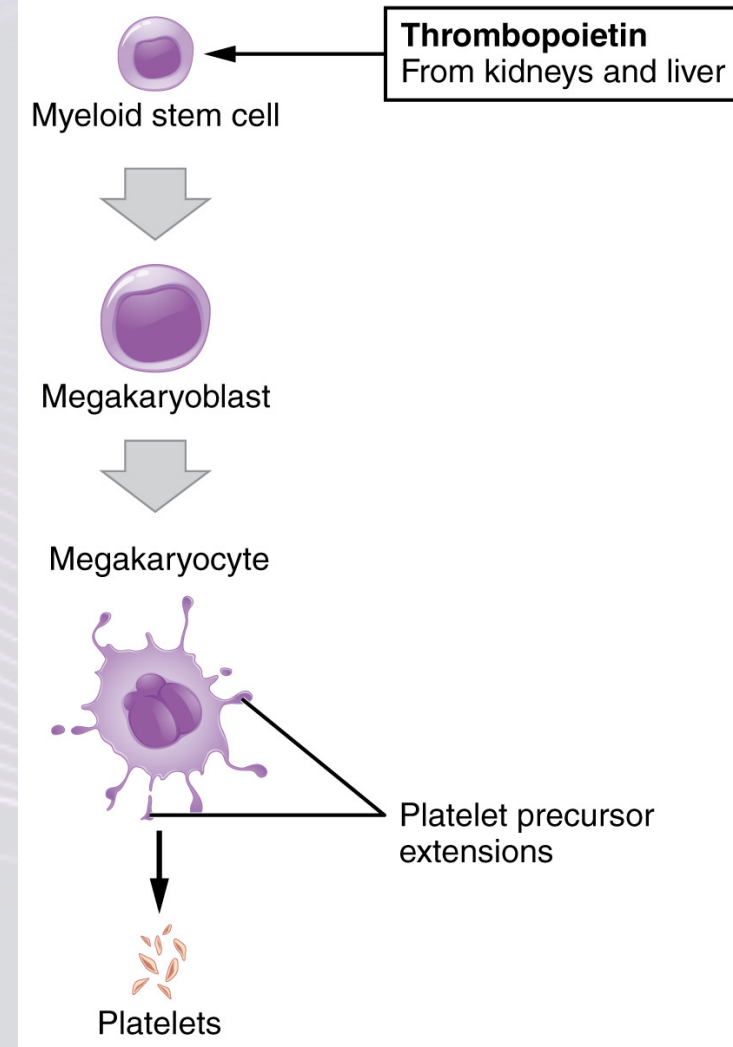
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# c) Platelets

- Flattened, membrane-enclosed packets
- Also called thrombocytes
  - ❖ Thrombos = clot
- Megakaryocytes
  - ❖ Very unusual cells found in red bone marrow
  - ❖ Enormous cells with large nuclei
  - ❖ During development and growth, they produce
    - Structural proteins
    - Enzymes
    - Membranes

↓  
Shed cytoplasm in small membrane-enclosed packets  
↓  
Platelets that enter circulation



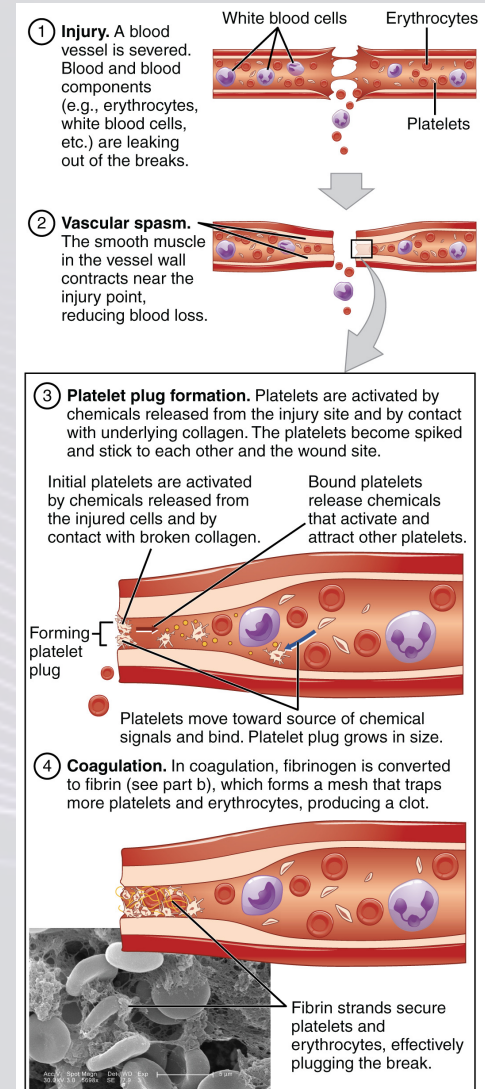
# Platelets Characteristics

- Megakaryocyte produce about 4000 platelets
  - ❖ Then nucleus is engulfed by phagocytes
- Lifespan
  - ❖ 1-12 days
- Quantity
  - ❖ Normal: 350,000/ $\mu$ L
    - 1/3 is held in the spleen
  - ❖ Thrombocytopenia
    - 80,000/ $\mu$ L



# Hemostasis

- An injury to a blood vessel initiates the process of hemostasis.
- Blood clotting involves three steps:
  - 1. Vascular spasm** - constricts the flow of blood.
  - 2. Platelet plug** - forms to temporarily seal small openings in the vessel.
  - 3. Coagulation** - then enables repair of vessel wall once leakage of blood has stopped.



(a) The general steps of clotting