

# KLINIKAL HEMATOLOGI

# DEFINISI HEMATOLOGI MERANGKUMI KAJIAN KE ATAS FUNGSI DARAH

- ▶ **Dapat dibahagikan kepada dua keadaan iaitu:-**
- ▶ 1. Malignancy
- ▶ 2. Non Malignancy

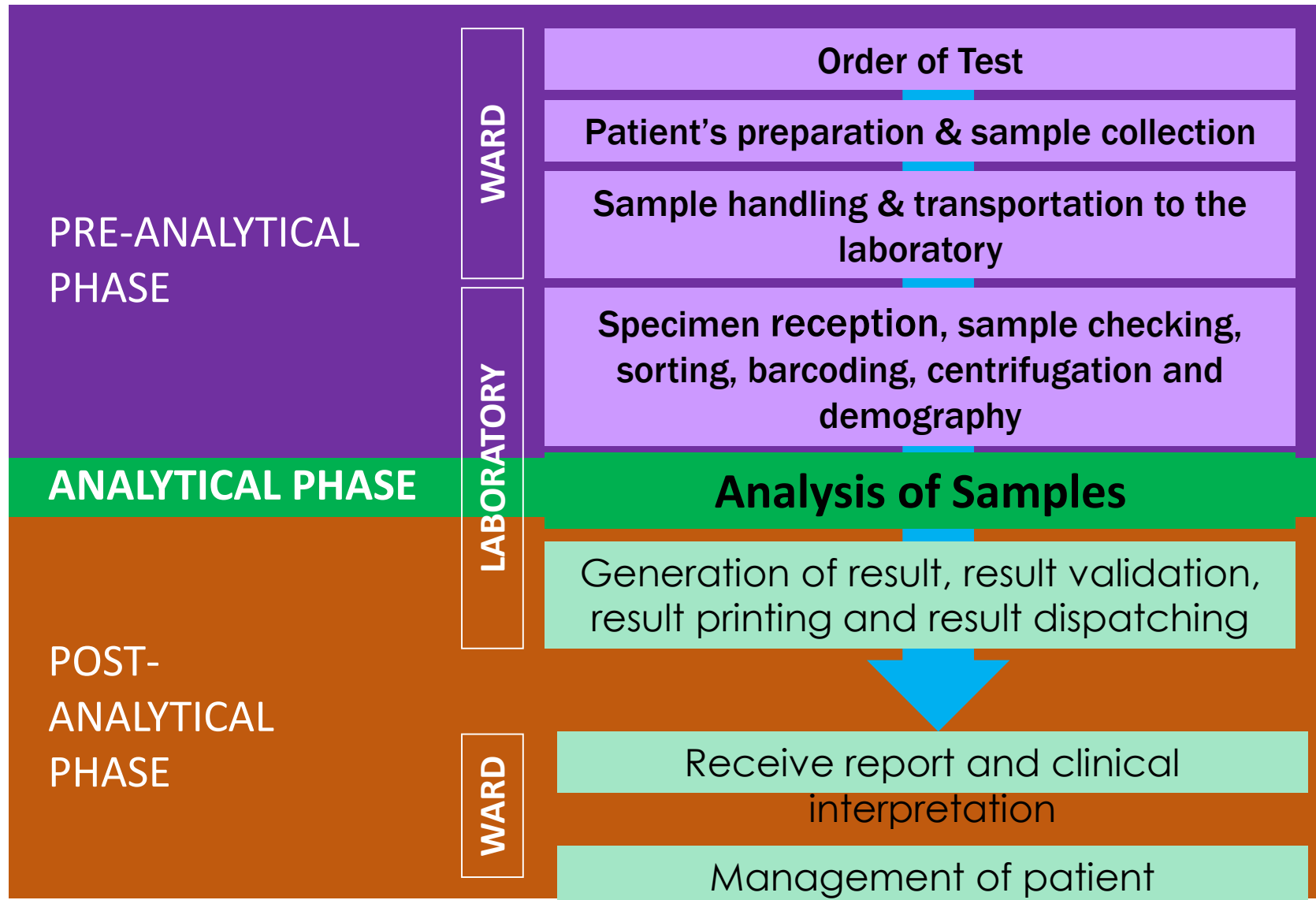
# Malignancy

- ▶ Lymphoma
- ▶ Leukaemia
- ▶ Multiple myeloma
- ▶ Myelodysplastic syndrome
- ▶ dll...

# Non Malignancy

- ▶ Anemia
- ▶ Hemophilia
- ▶ Hemoglobinopathy
- ▶ dll...

# LABORATORY TESTING PROCESS



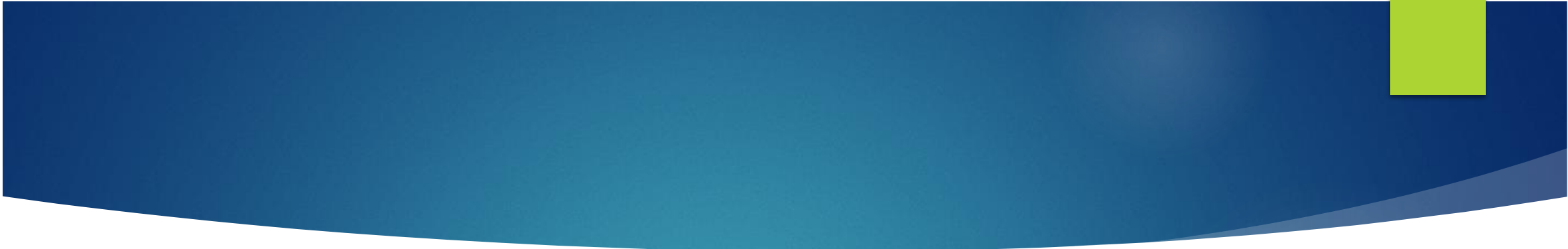
# Pre Analisis

- ▶ Jenis-jenis antibekuan yang digunakan bagi ujian yang dijalankan dimakmal Klinikal Hematologi.

Jenis antibekuan	Jenis ujian
K2EDTA	FBC,FBP,Hb Analisis & CD4/CD8
Sodium citrate	PT/APTT,D.Dimer,Fbg, Thrombophilia screening & ESR
Litium heparin	OFT & kromosom study

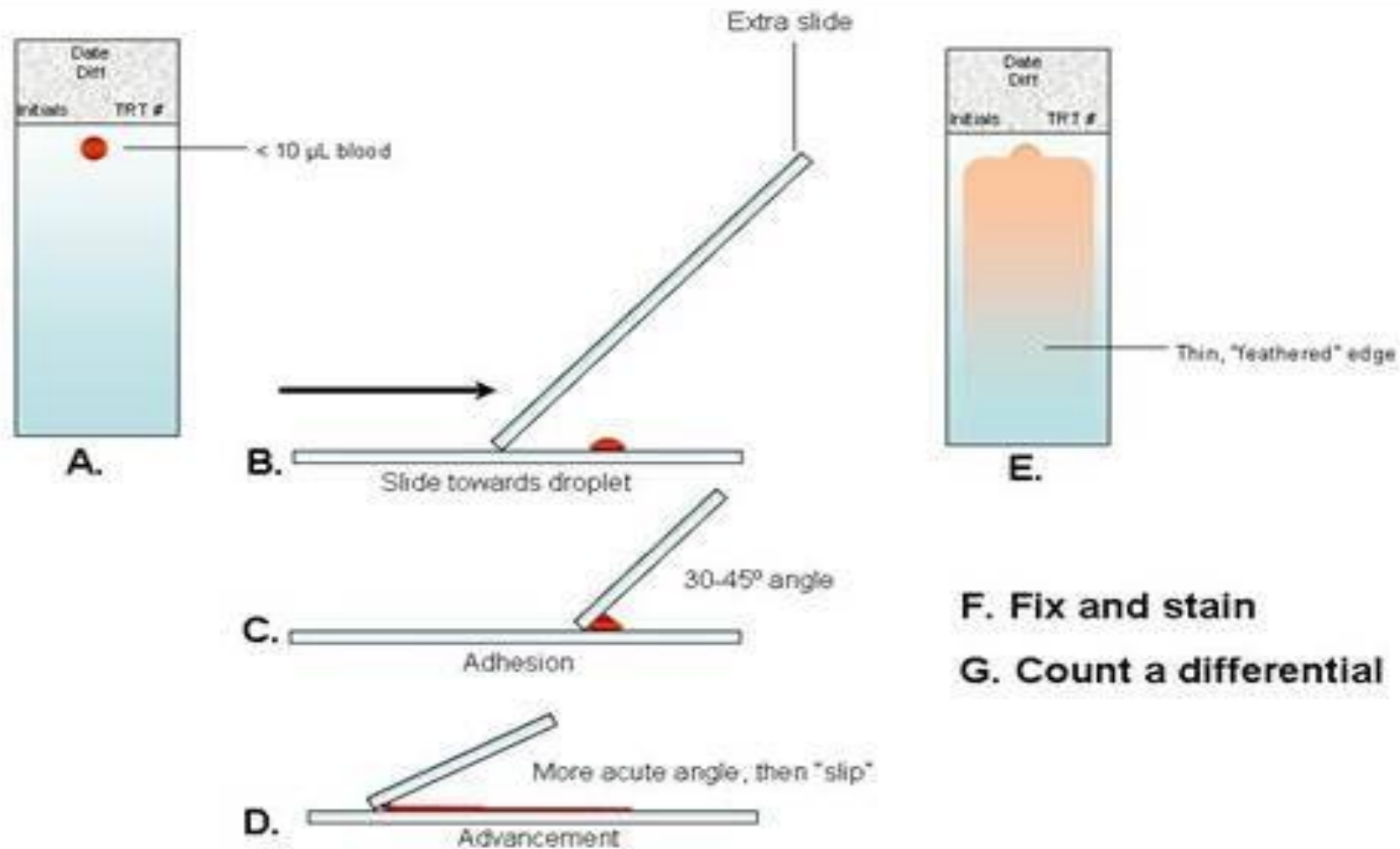
# Jenis- jenis ujian yang dijalankan di makmal klinikal hematologi

- ▶ 1. Ujian Full Blood Count
- ▶ 2. Ujian coagulation profile
- ▶ 3. Ujian ESR
- ▶ 4. Ujian G6PD

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- ▶ Mengetahui prosedur dan prinsip yang digunakan ke atas setiap ujian yang dijalankan di makmal klinikal hematologi iaitu:-
    - ▶ 1. Jenis ujian
    - ▶ 2. Bahan uji dan analyser
    - ▶ 2. Parameter
    - ▶ 3. Julat normal
    - ▶ 4. Laporan



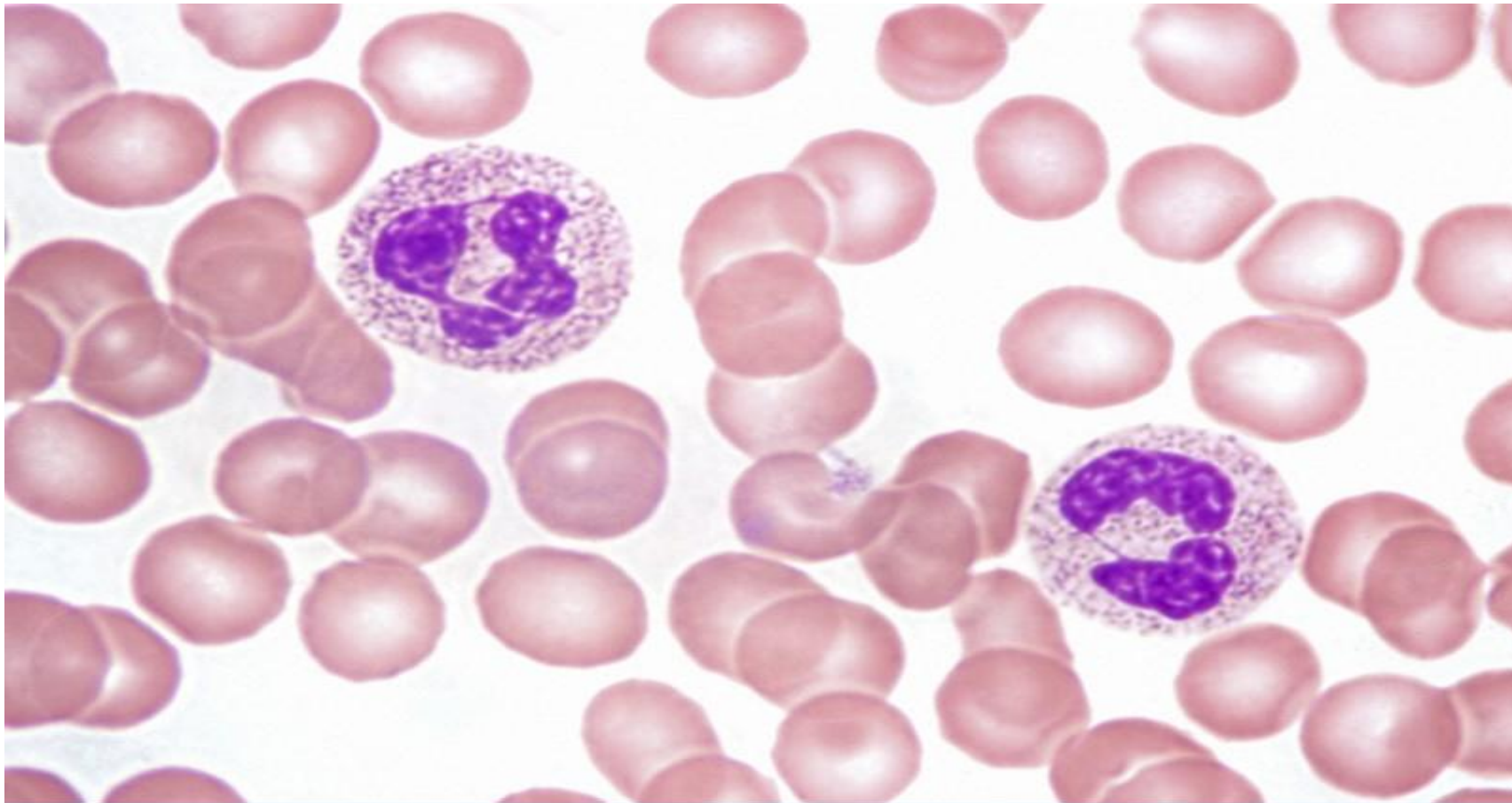
# Penyediaan Film Darah Nipis



# Morfologi sel darah

- ▶ 1. Neutrophil
- ▶ 2. Lymphocyte
- ▶ 3. Monocyte
- ▶ 4. Eosinophil
- ▶ 5. Basophil
- ▶ 6. Blast sel
- ▶ 7. Sel darah Merah
- ▶ 8. NRBC
- ▶ 9. Platelet

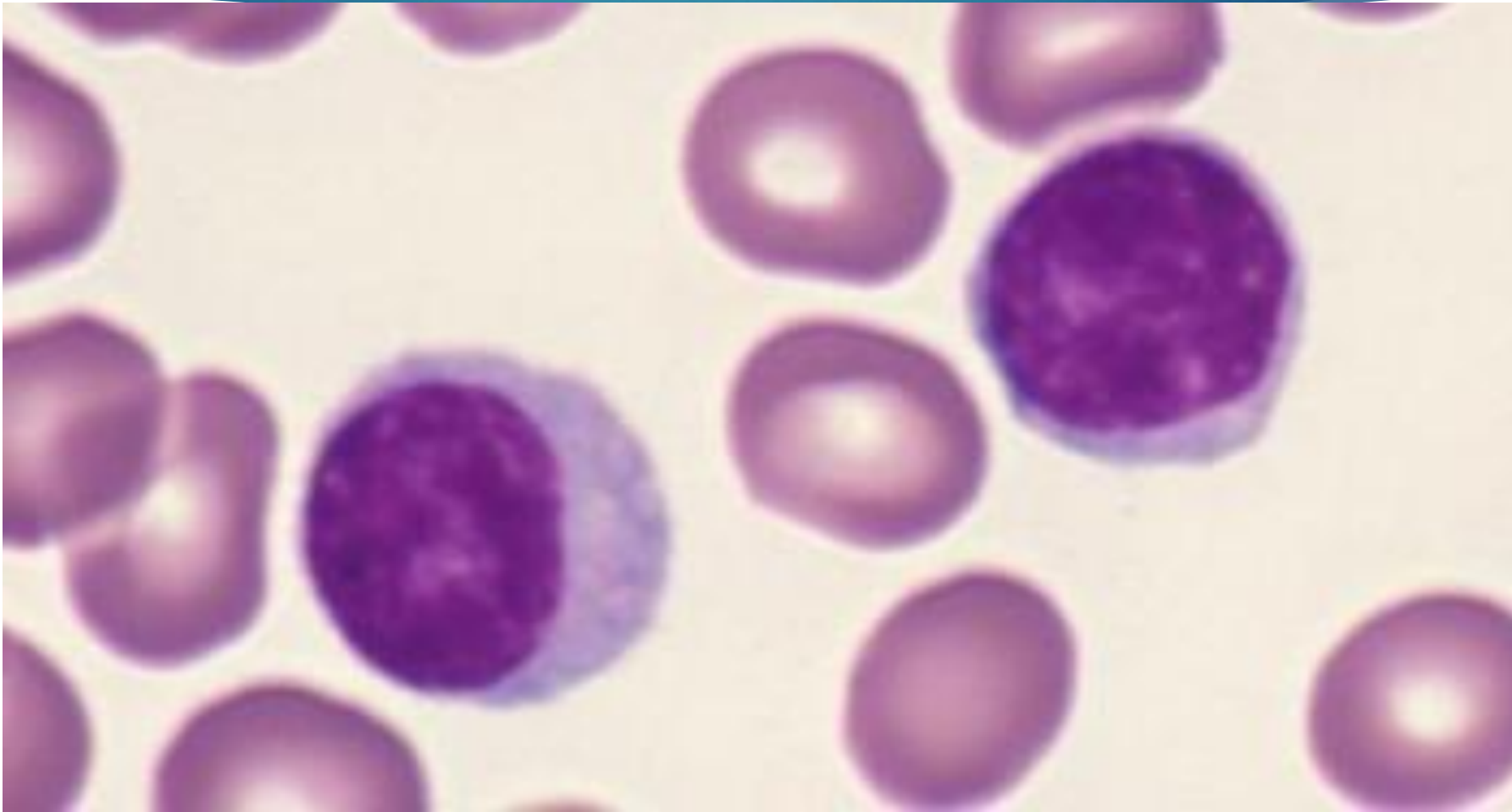
# Neutrophil



# Ciri-ciri Neutrophil

- ▶ Mempunyai nukleus ber 'lobed' yang berwarna 'dark purple'".
- ▶ Sitoplasma yang berwarna 'pink, dan bergranul.

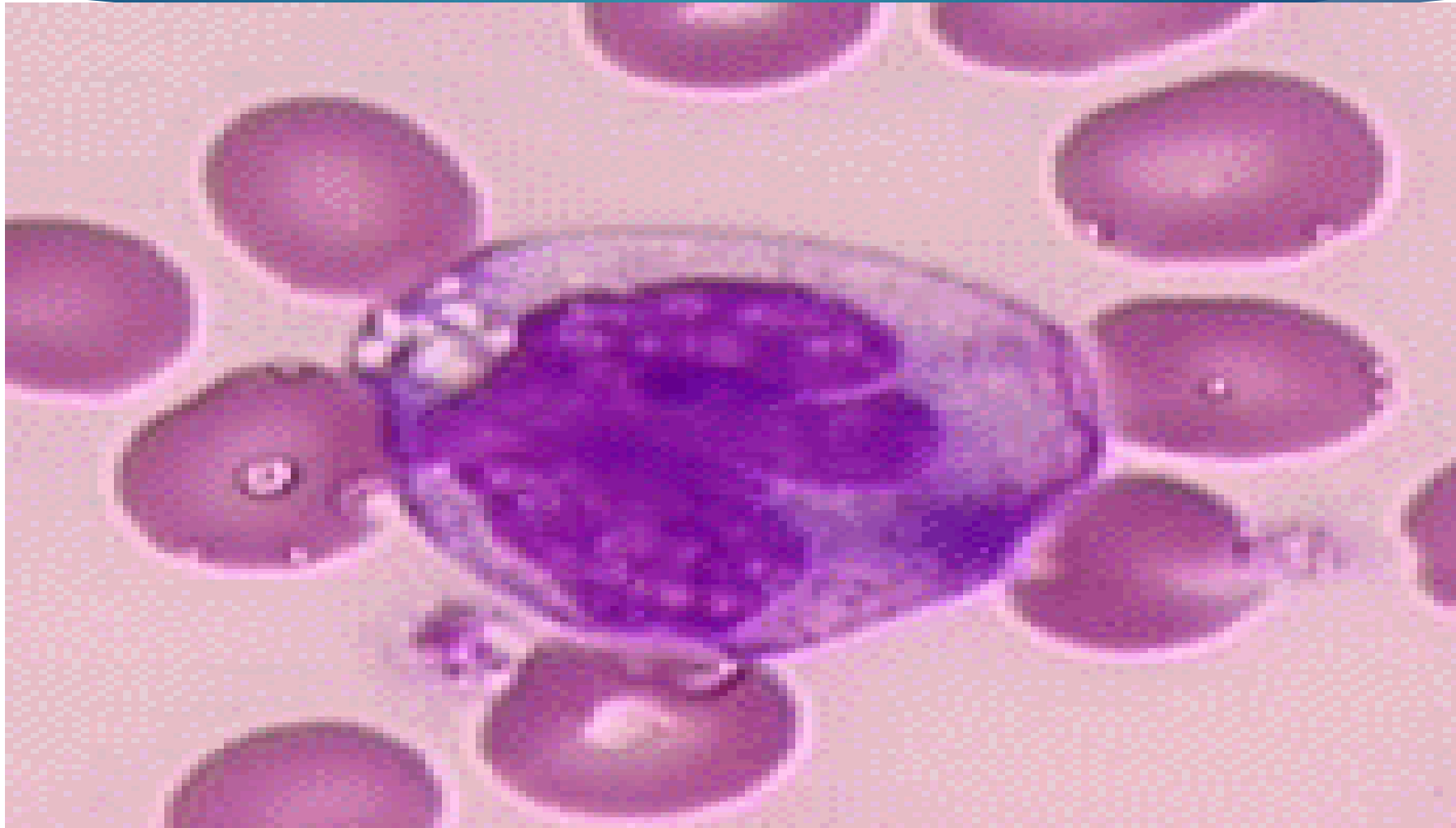
# Lymphocyte



# Ciri-ciri lymphocyte

- ▶ Saiz mengikut sel darah merah
- ▶ Mempunyai nukleus 90% daripada jumlah sel yang berwarna 'dark purple'.
- ▶ Sitoplasma berwarna kebiruan

# Monocyte



# Ciri-ciri monocyte

- ▶ Bersaiz besar
- ▶ Nukleus berbentuk tapak kuda berwarna purple
- ▶ Sitoplasma mempunyai vacuol berwarna 'gray blue'



# Eosinophil

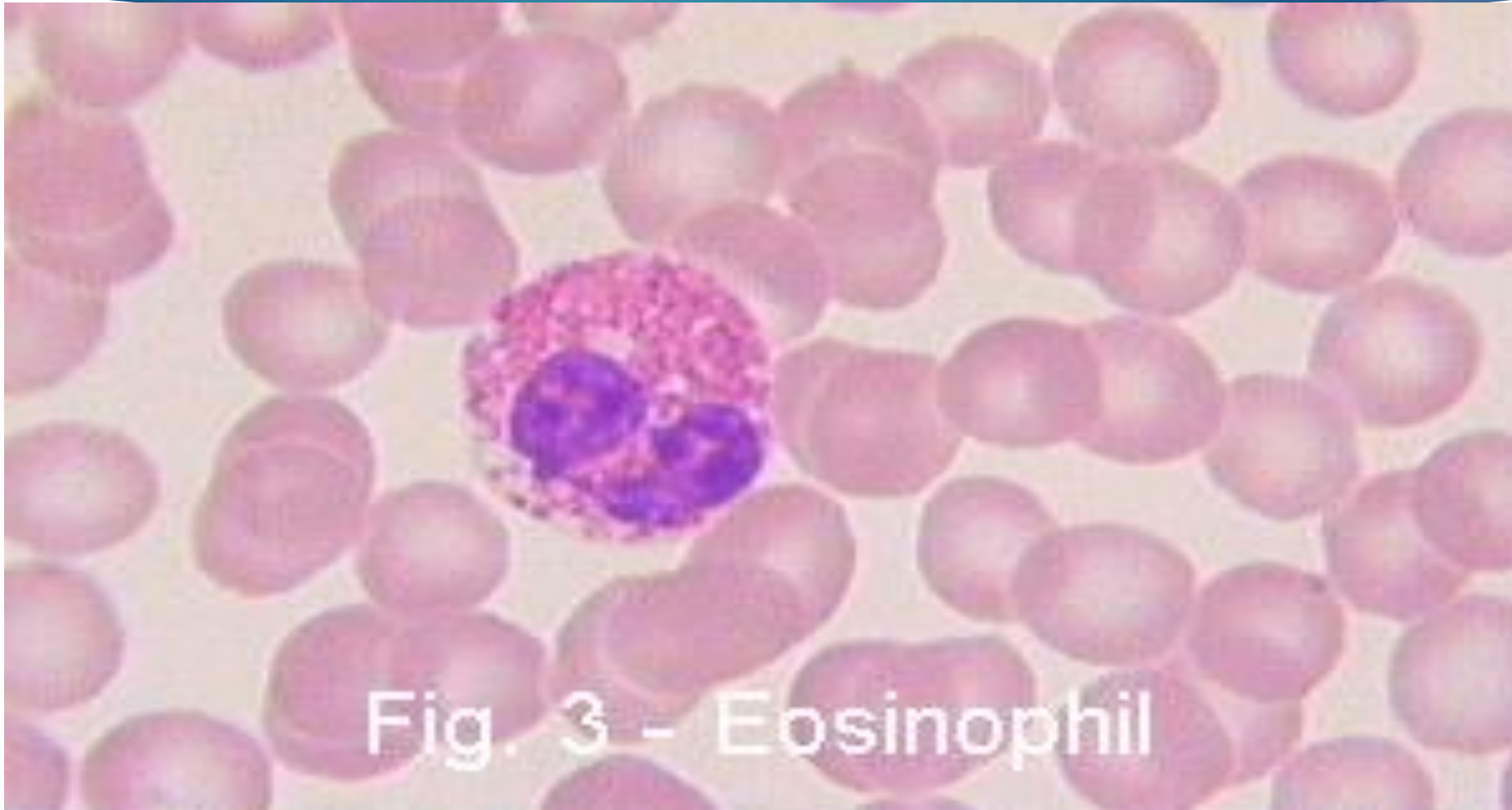
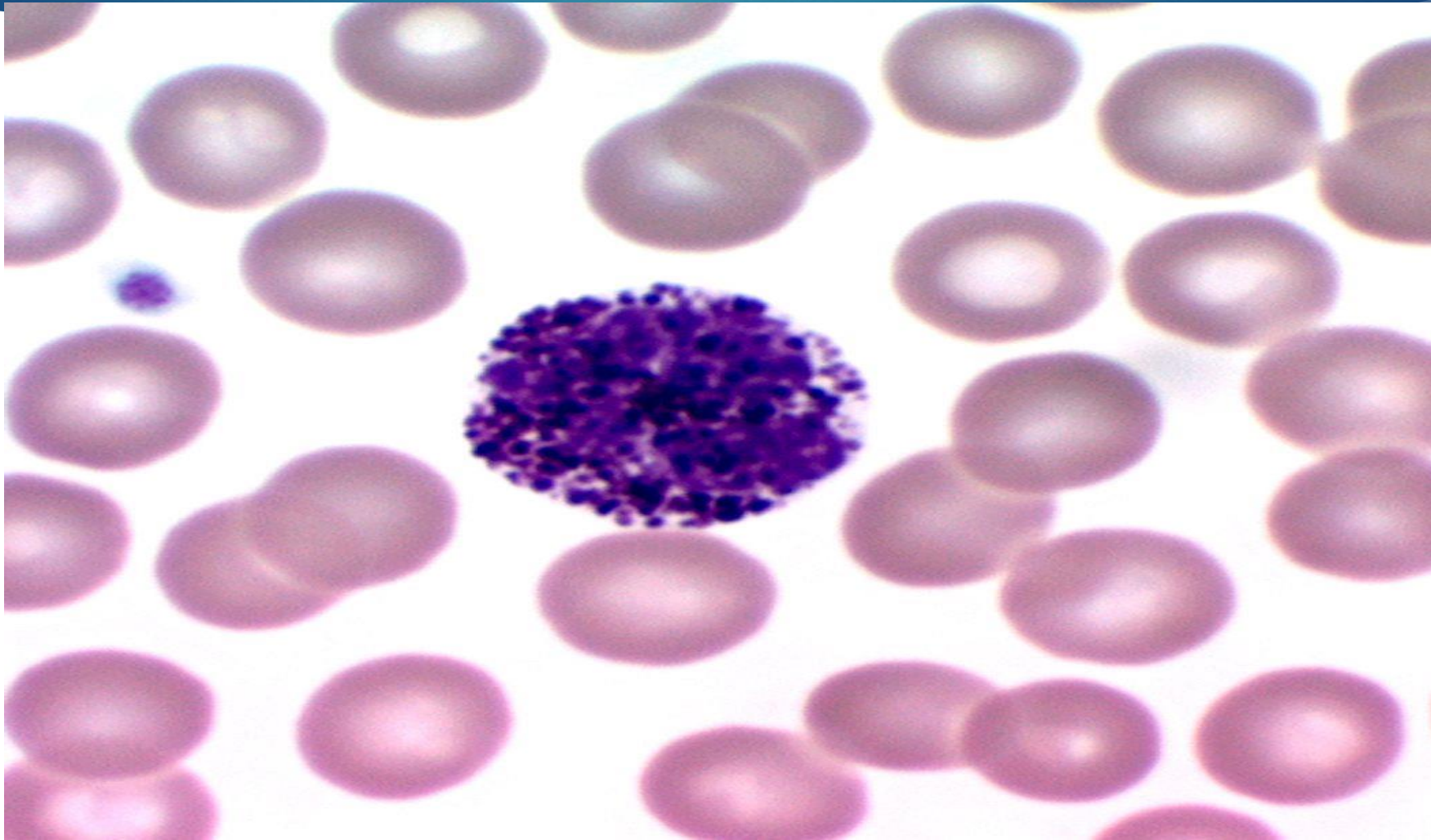


Fig. 3 - Eosinophil

# Ciri-ciri eosinophil

- ▶ Nukleus mempunyai 2 lobed berwarna 'dark purple'
- ▶ Sitoplasma berwarna 'pale blue'
- ▶ Sitoplasma mempunyai 'coral granul' berwarna orange

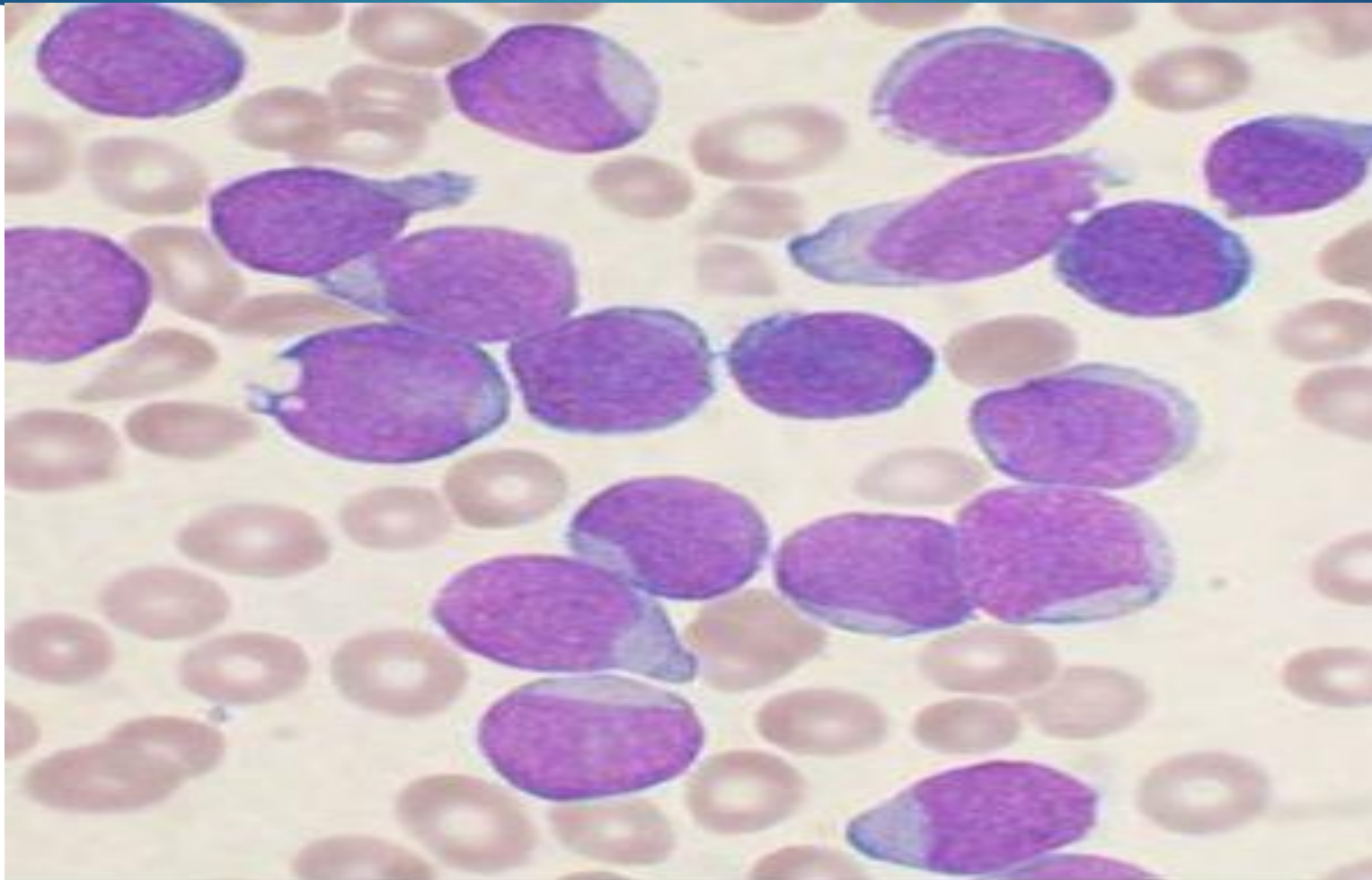
# Basophil



# Ciri-ciri basophil

- ▶ Nukleus 'dark purple' kromatin
- ▶ Sitoplasma 'dark blue/black granules

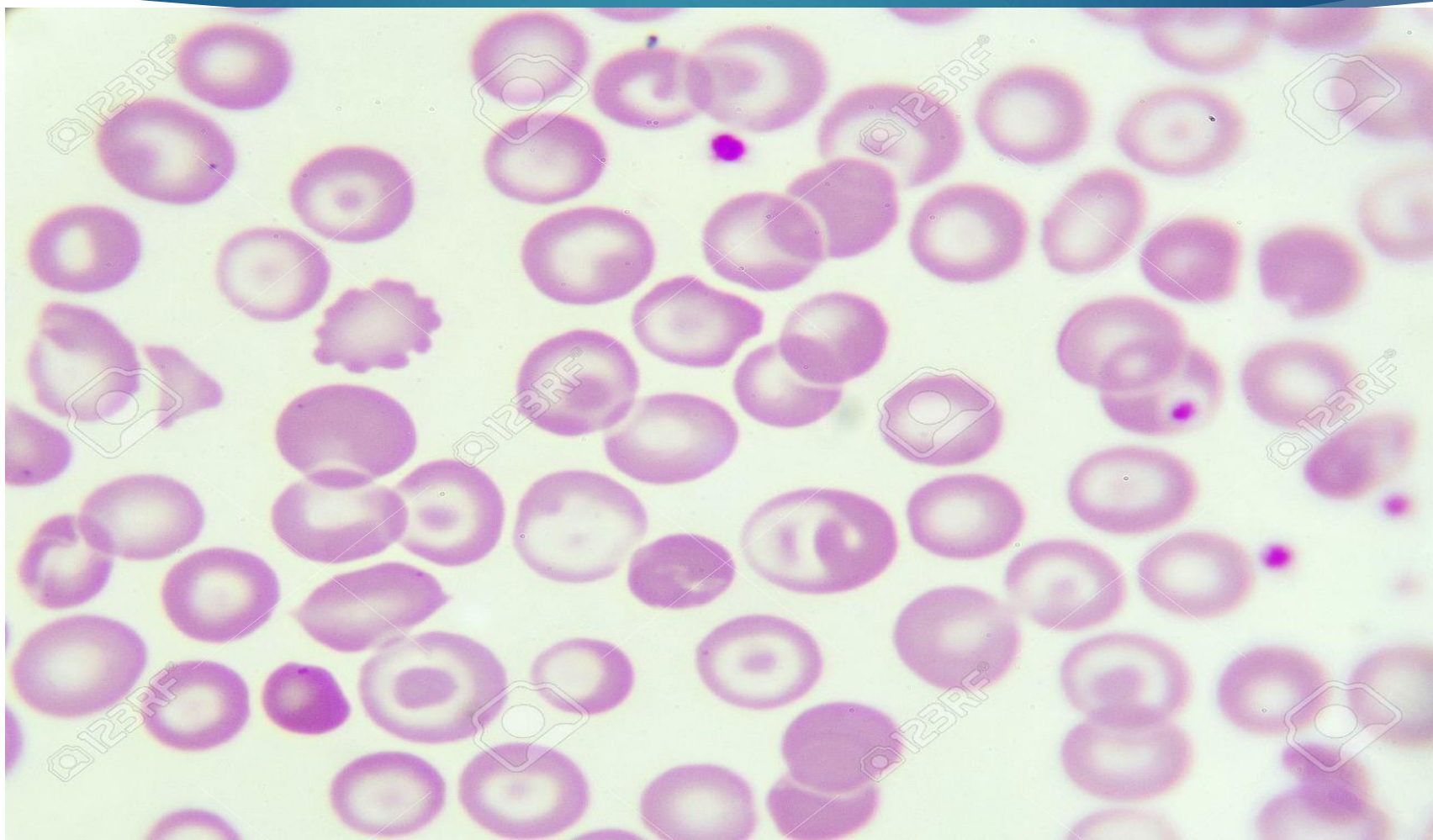
# Blast cell



# Ciri-ciri blast cell

- ▶ Saiz besar
- ▶ Nukleus 95% daripada jumlah sel berwarna purple
- ▶ Nukleus kelihatan licin dan ber vocual
- ▶ Sitoplasma sedikit berwarna kebiruan.

# Platelet & Rbc



# Ciri-ciri Rbc

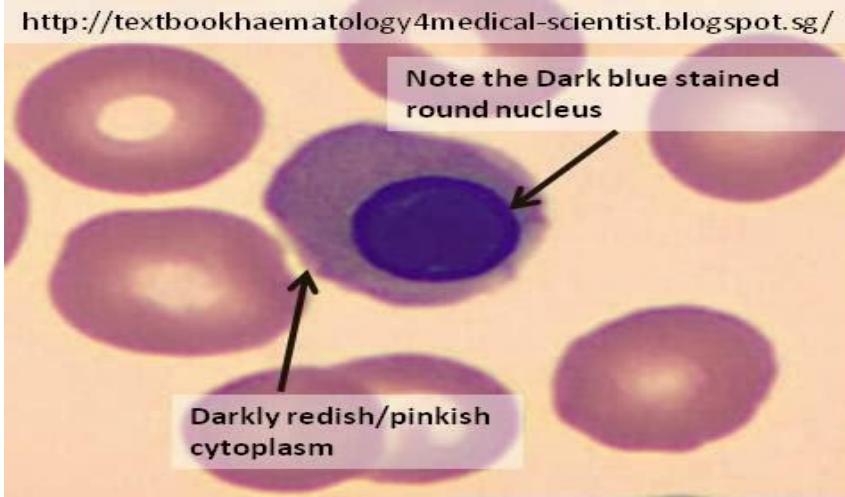
- ▶ Rbc normal:
- ▶ Berbentuk bulat, bersaiz sekata dan ada central pallor
- ▶ Berwarna salmon pink
- ▶ Rbc abnormal:
- ▶ Berbagai bentuk, saiz tidak sekata
- ▶ Warna rbc mengikut jenis sel



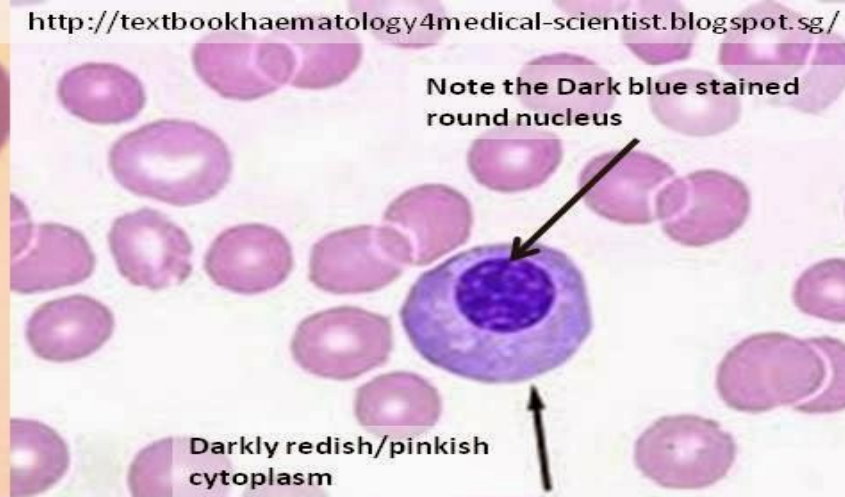
# Ciri-ciri platelet

- ▶ Saiz kecil
- ▶ Granul berwarna purple

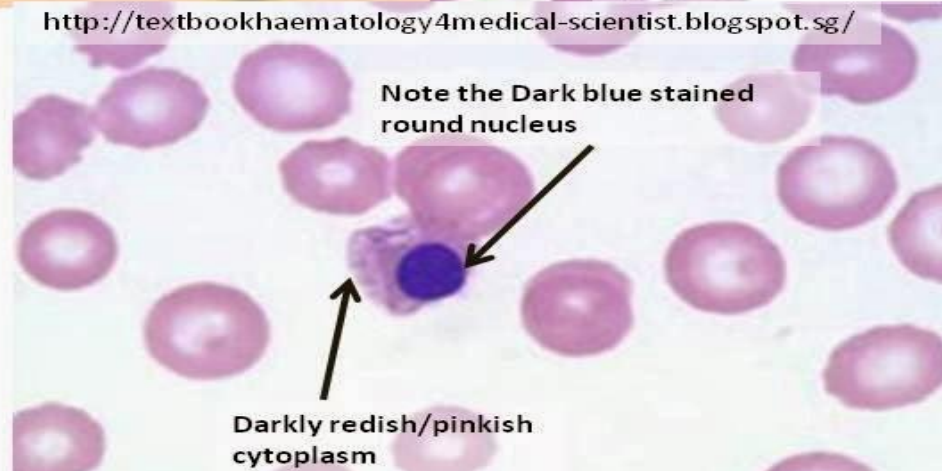
# NRBC



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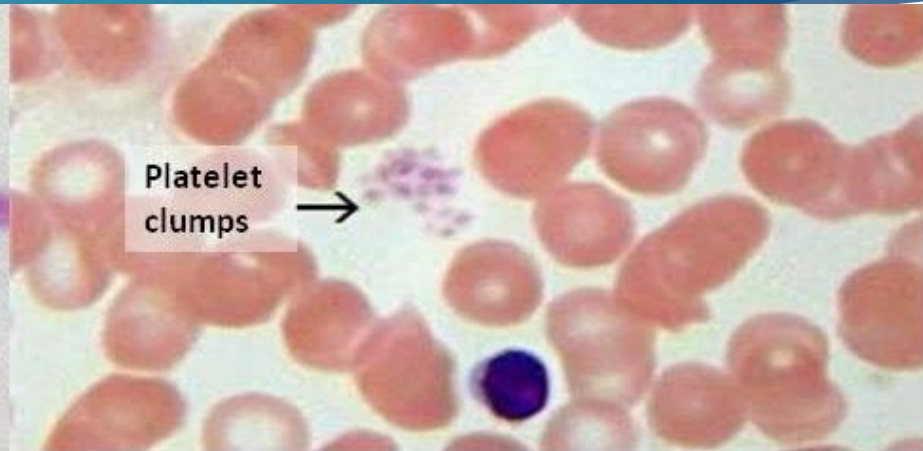


<http://o.quizlet.com/>

# Platelet clumps



<https://ahdc.vet.cornell.edu>



<http://legacy.owensboro.kctcs.edu/>

