Microscopic Examination

血液鏡檢組
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Microscopic Examination

• Blood (血液)
  • Blood parasites
  • Reticulocyte
  • WBC different count

• Body fluid (體液)
  • Pleural fluid, Peritoneal fluid, Synovial fluid and Semen

• Stool (糞便)
  • Parasites

• Urine (尿液)
  • Urine sediment
Staining (染色)

- Liu’s Stain
  - WBC different count
  - Body fluid
- Brilliant cresyl blue (BCB)
  - Reticulocyte
- Giemsa Stain
  - Blood parasites
- MIF Stain
  - Stool parasites
Liu’s Stain

• Named for Dr. 刘禎輝, who devised this stain in 1953
  • Widely used in blood smears in Taiwan
  • Histology, cytology, vaginal secretions, sputum, pus

• Material
  • Liu A: Methylene blue (0.4g/L), Eosin Y (2.4g/L) dissolved in methanol solution
  • Liu B: Azure B (1g/L) + methylene blue (1g/L) dissolved in phosphate buffer (PH 8.0 ± 0.1)
Liu’s Stain
Reticulocyte

- Brilliant cresyl blue
- Reticulocytes are immature red blood cells
- A reticular (mesh-like) network of ribosomal RNA
- The number of reticulocytes is a good indicator of bone marrow activity

正常參考值：
成人 0.5 ~ 1.5 %；1 歲以内 0.2 ~ 5.0 %
Reticulocyte
Giemsa Stain

• Named for *Gustav Giemsa* (German)
  • Initially used in malaria and parasites.
  • Sometimes used for blood films, but more suitable for sections. For its more consistent results.

• Material
  • Giemsa powder: Azure II with Azure II eosinate
  • Buffer solution
Giemsa Stain

↑ Neutrophil

↑ Eosinophil

↑ Basophil
Giemsa Stain

Trypanosoma brucei 布氏錐蟲

Plasmodium vivax 間日瘧原蟲
MIF Stain

- 寄生蟲濃縮法
- 阿米巴痢疾

- Material
  - MF Stock Solution
  - Lugol Solution: Iodine + Potassium Iodine
  - Ethyl Acetate
  MF Stock Solution : Lugol Solution = 15 : 1 (原廠說明)
MIF Stain

阿米巴痢疾 *Entamoeba histolytica*  大腸阿米巴 *Entamoeba coli Cyst*