



# PRAKTIKUM PARASITOLOGI 2

Sodikin Kurniawan

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## PERTEMUAN 2

*Entamoeba coli, Entamoeba histolytica*

*Lecture prepared by Sodikin Kurniawan, Muhammadiyah University of Semarang*



# ***Protozoa***

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*Unicellular Parasite*

*Lecture prepared by Sodikin Kurniawan, Muhammadiyah University of Semarang*

# Protozoa

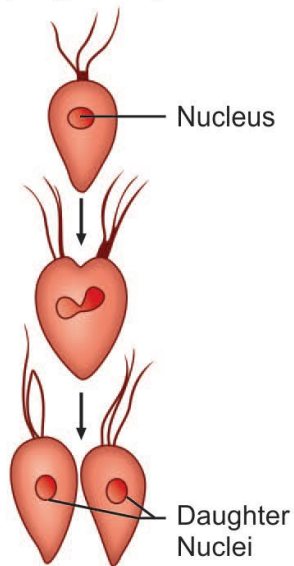
- Mikroorganisme eukariotik bersel tunggal.
- Sel protozoa khas dibatasi oleh *trilaminar unit membrane* dan *contractile fibrils*, memungkinkan sel untuk bergerak dan berubah bentuk.
- Mempunyai inti & anak inti (*nucleus, karyosome*)
- **Sitoplasma** : Ekstoplasma & Endoplasma
  - **Ekstoplasma** : Bagian luar sebagai alat gerak, menelan makanan (*pseudopodia*) selain itu juga sebagai perlindungan sel, respirasi & sensorik.
  - **Endoplasma** : Bagian granular dalam sitoplasma yang terdapat inti sel.

# Protozoa

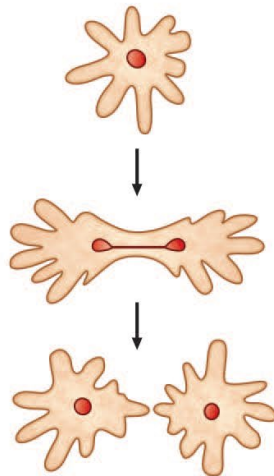
Terminologi : *Chromatoid body*, *Karyosome*, *Kinetoplast*, *Cilia*,  
*Trophozoite*

Reproduksi : Aseksual & Seksual

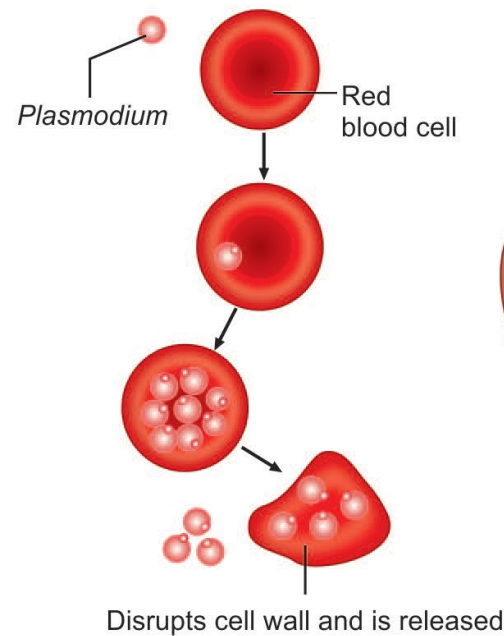
Longitudinal  
binary fission  
(Flagellates)



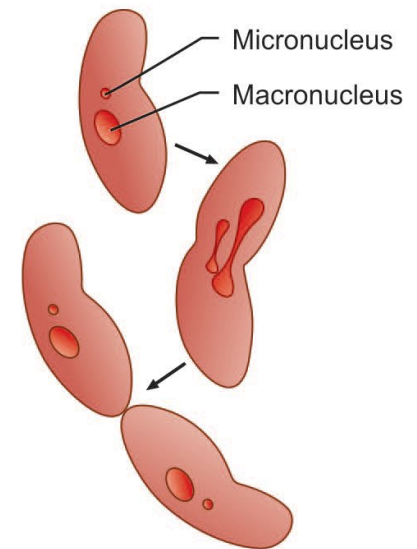
Binary fission  
(Amoeba)



Multiple fission  
(schizogony)



Transverse  
binary fission  
(Ciliates)



# Klasifikasi Protozoa

Phylum	Subphylum	Superclass	Class	Genus
<i>Sarcomastigophora</i>	<i>Mastigophora</i> (flagel)		<i>Zoomastigophorea</i>	<i>Trypanosoma</i>
				<i>Giardia</i>
				<i>Trichomonas</i>
	<i>Sarcodina</i> (pseudopodia)	<i>Rhizopoda</i>	<i>Lobosea</i>	<i>Entamoeba</i>
				<i>Iodamoeba</i>
<i>Apicomplexa</i>			<i>Sporozoea</i>	<i>Toxoplasma</i>
				<i>Plasmodium</i>
<i>Ciliophora</i>				<i>Balantidium</i>
<i>Microspora</i>				<i>Microsporum</i>



# ***Amoebae***

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*Unicellular Parasite*

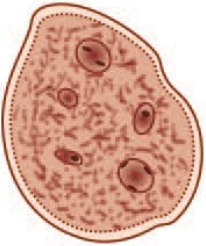
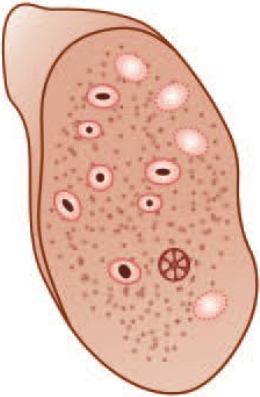
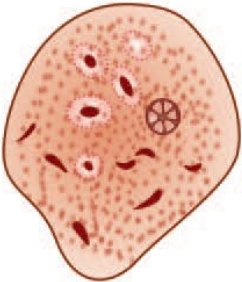
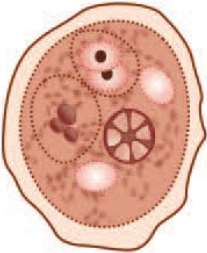
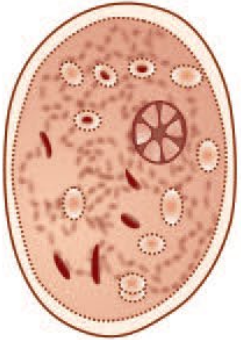
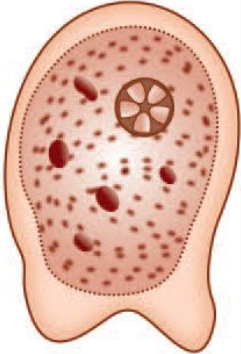
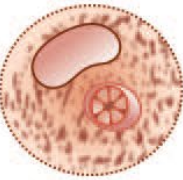
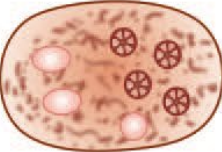
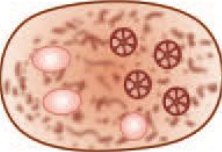

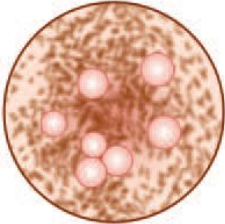

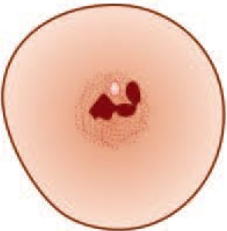
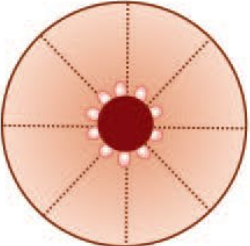

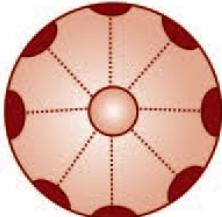
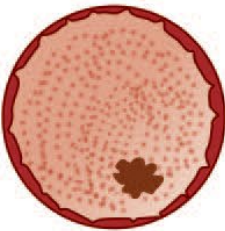
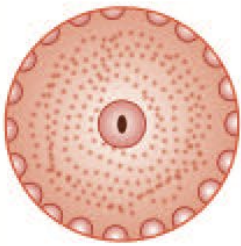
*Lecture prepared by Sodikin Kurniawan, Muhammadiyah University of Semarang*

# Klasifikasi Amoebae

<b><i>Intestinal amoebae</i></b>	<b><i>Freeliving amoebae</i></b>
<b><i>Entamoeba histolytica</i></b>	<i>Naegleria fowleri</i>
<b><i>Entamoeba coli</i></b>	<i>Acanthamoeba spp.</i>
<i>Entamoeba dispar</i>	<i>Balamuthia mandrillaris</i>
<i>Entamoeba polecki</i>	
<i>Entamoeba hartmanni</i>	
<i>Entamoeba gingivalis</i>	
<i>Endolimax nana</i>	
<i>Iodamoeba butschlii</i>	

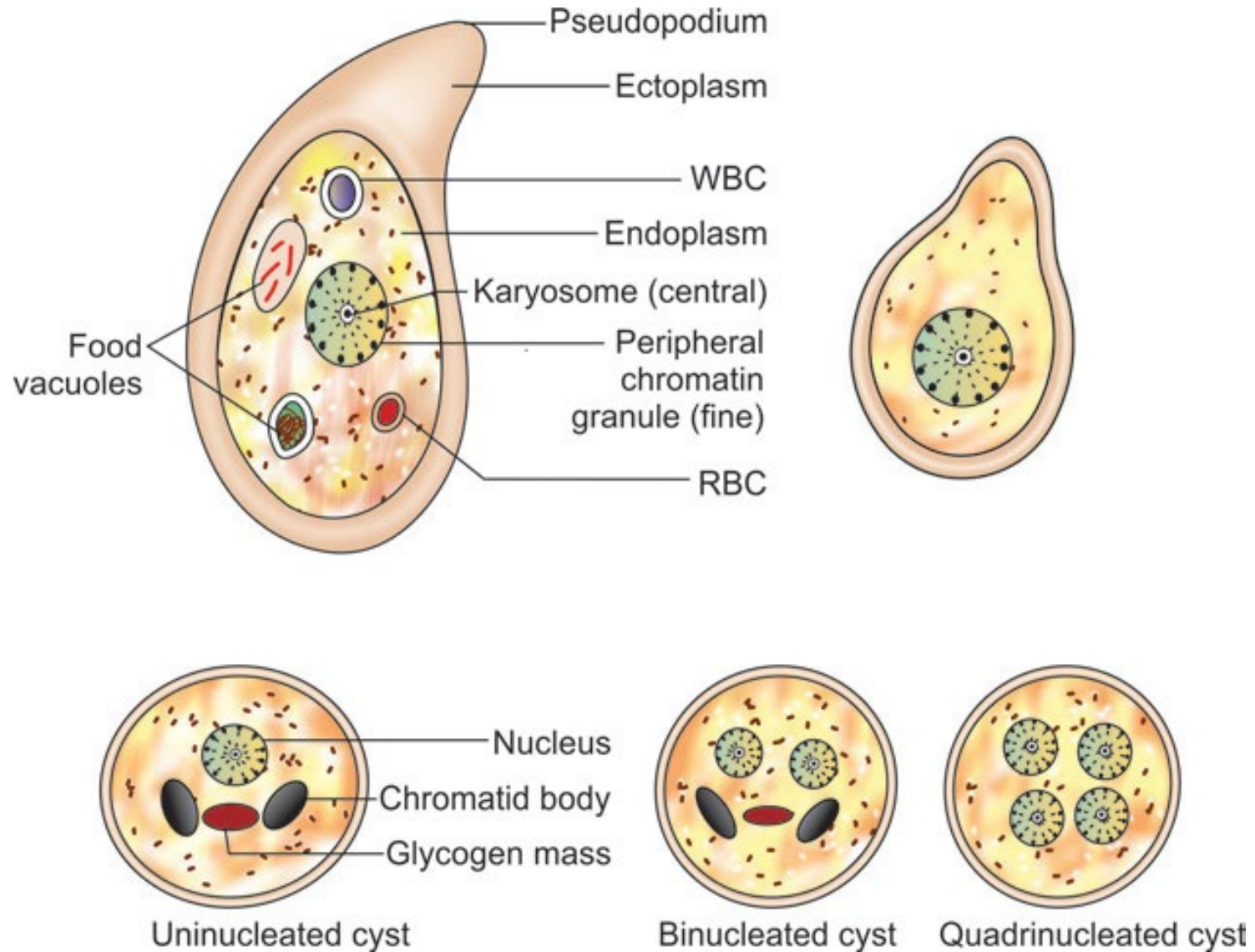


# Amoebae

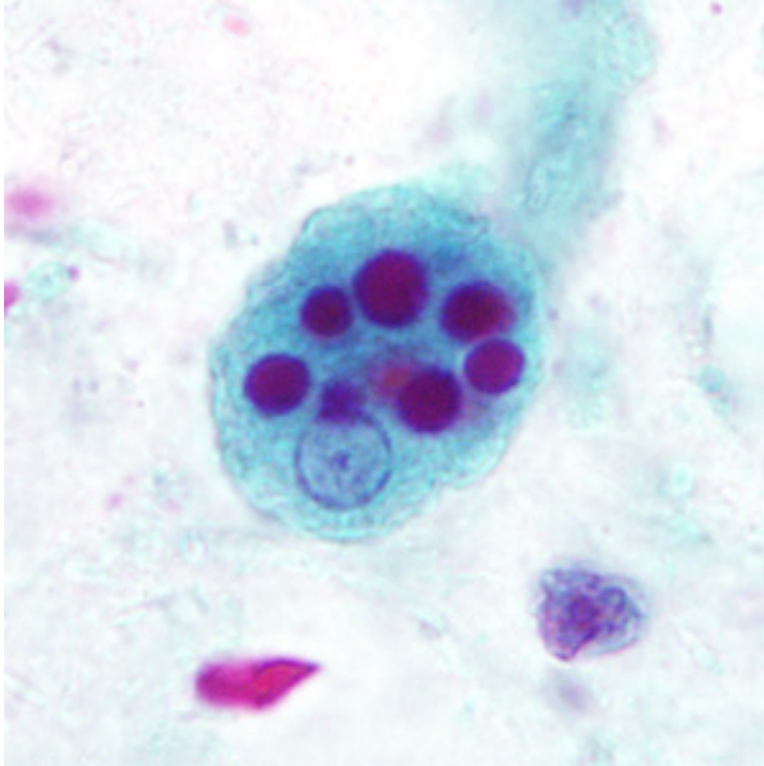
<i>D. fragilis</i>	<i>I. buetschlii</i>	<i>E. nana</i>	<i>E. gingivalis</i>	<i>E. coli</i>	<i>E. histolytica</i>	
						<b>Trophozoite</b>
						<b>Cyst</b>
						<b>Nucleus</b>



# Entamoeba histolytica

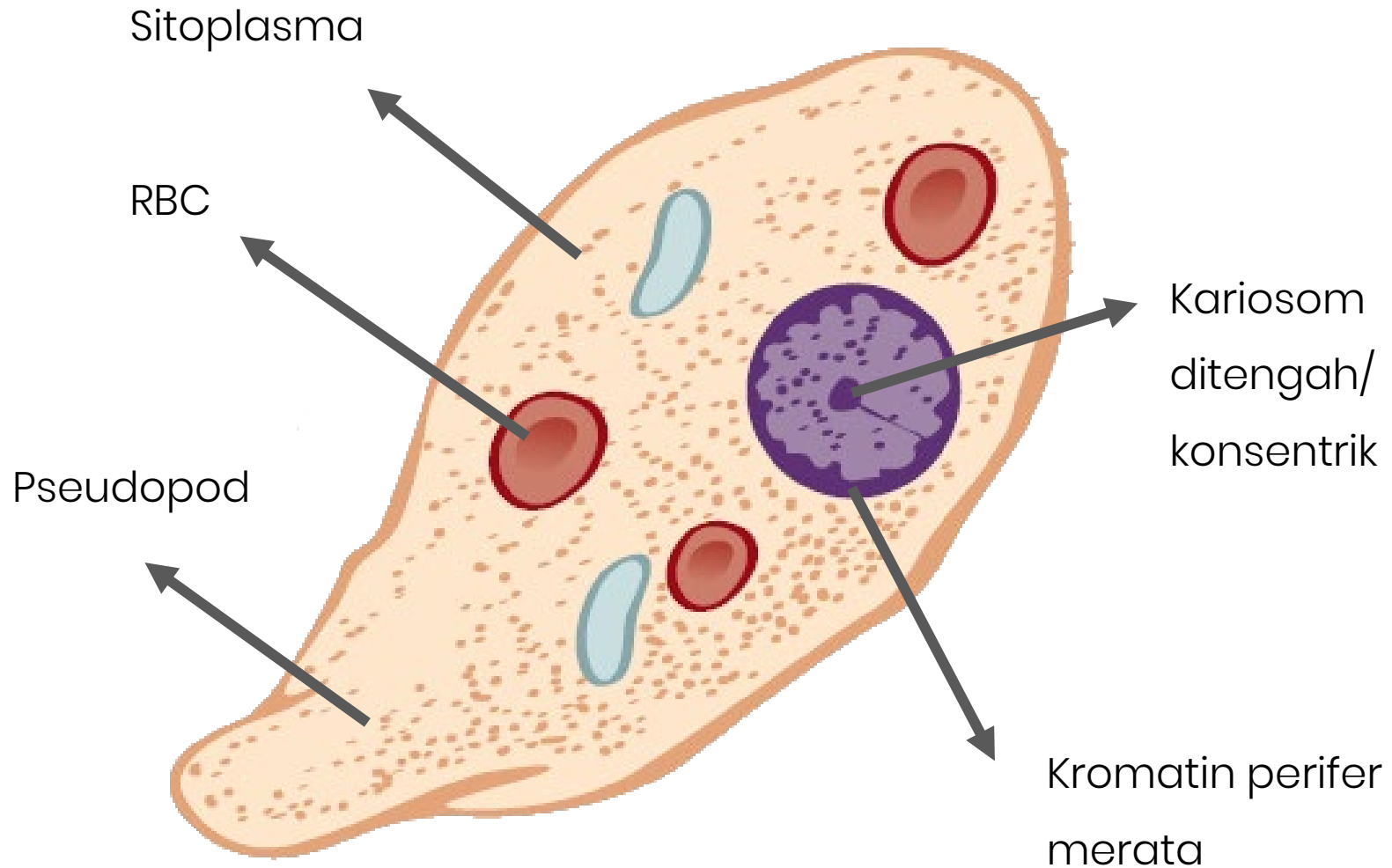


# Entamoeba histolytica trophozoite

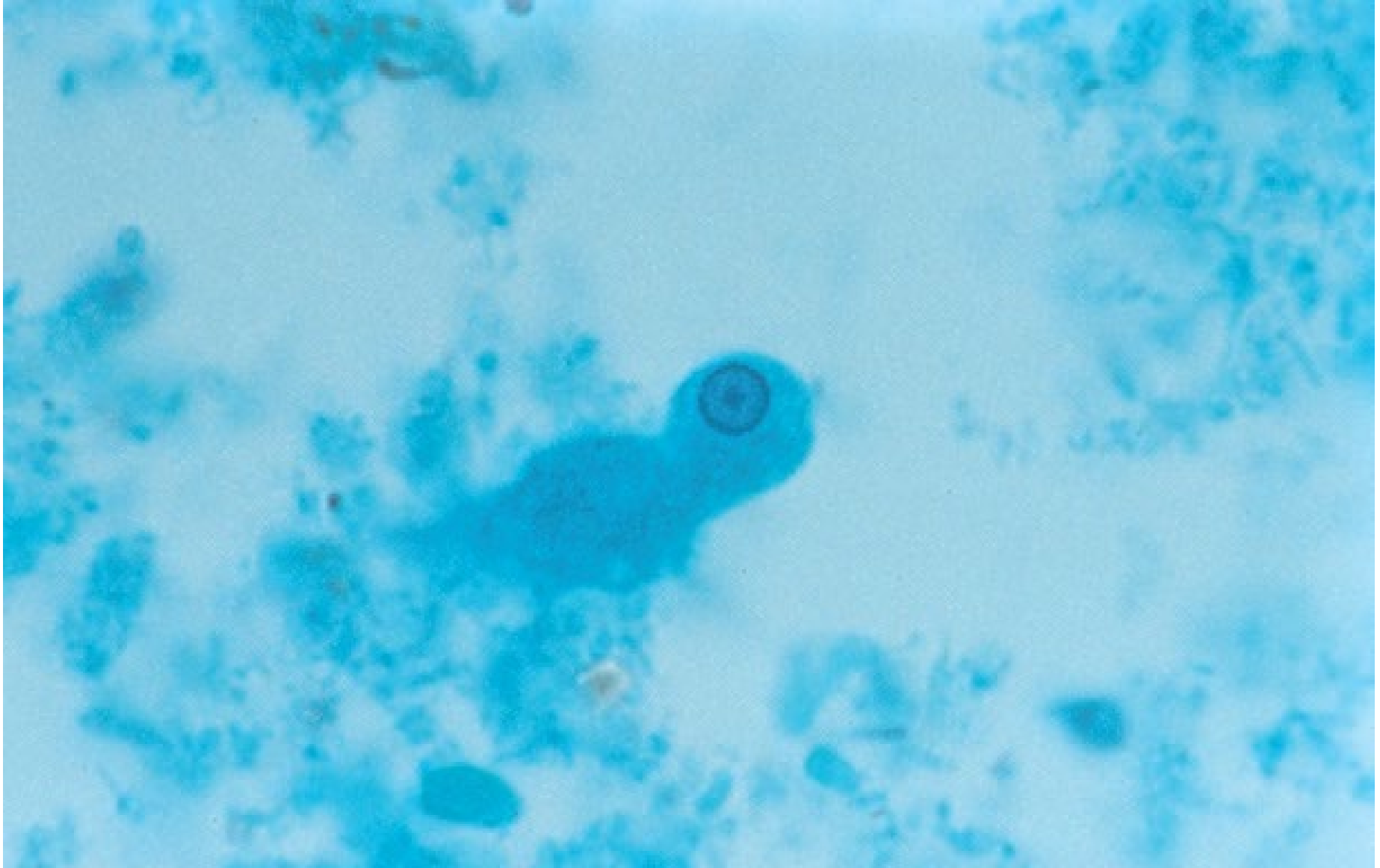


- Kisaran ukuran : 12 – 60 mikron rata – rata 15 – 20 mikron
- **Motilitas** : Pseudopodia progresif seperti jari
- Jumlah inti : Satu
- Karyosome : Kecil dan tengah
- Kromatin perifer : Baik dan merata
- Sitoplasma : Butiran halus
- Inklusi sitoplasma : **Mencerna sel darah merah**

# Entamoeba histolytica trophozoite



# Entamoeba histolytica trophozoite

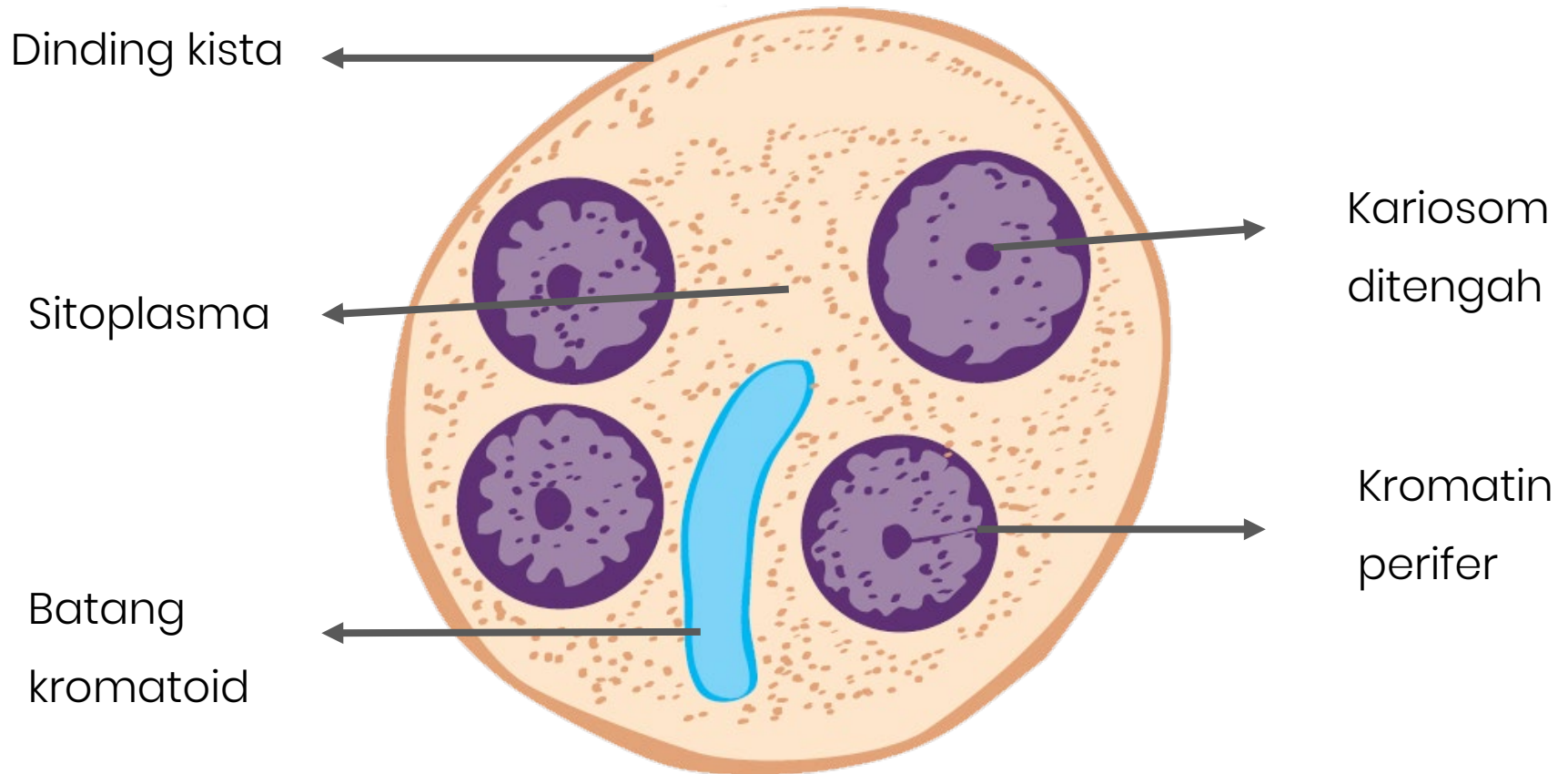


# Entamoeba histolytica cyst



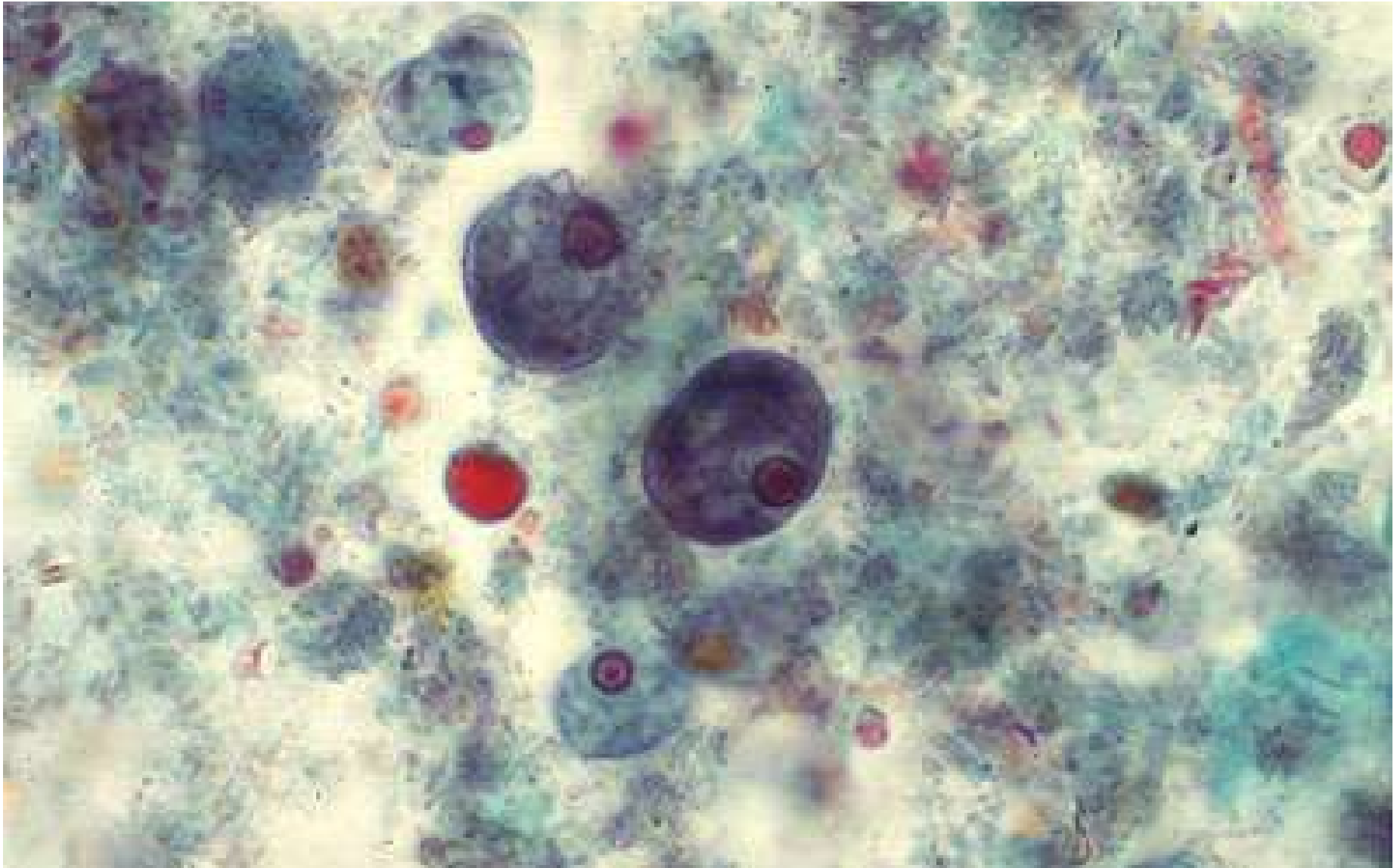
- Kisaran ukuran : 10 – 20 mikron, rata – rata 12 – 15 mikron
- Bentuk : Bulat, bundar
- Jumlah inti : **1 – 4**
- Karyosome : Kecil dan tengah
- Kromatin perifer : Bagus & merata
- Sitoplasma : Butiran halus
- Inklusi sitoplasma : **Batangan kromatoid**, & ada massa glikogen pada kista muda

# Entamoeba histolytica cyst

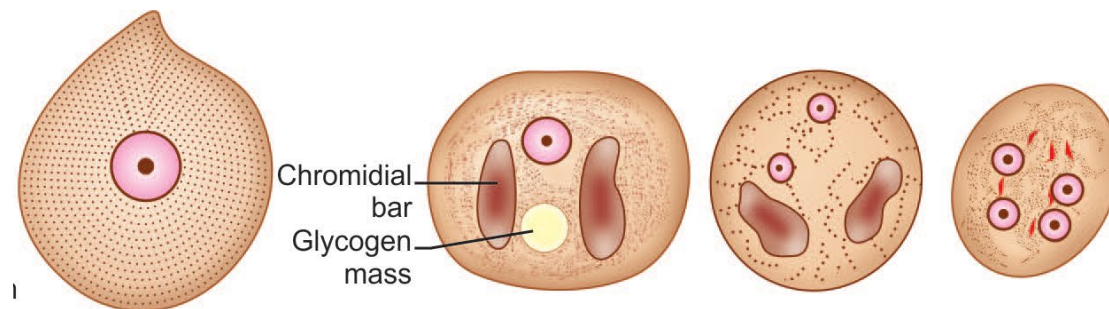
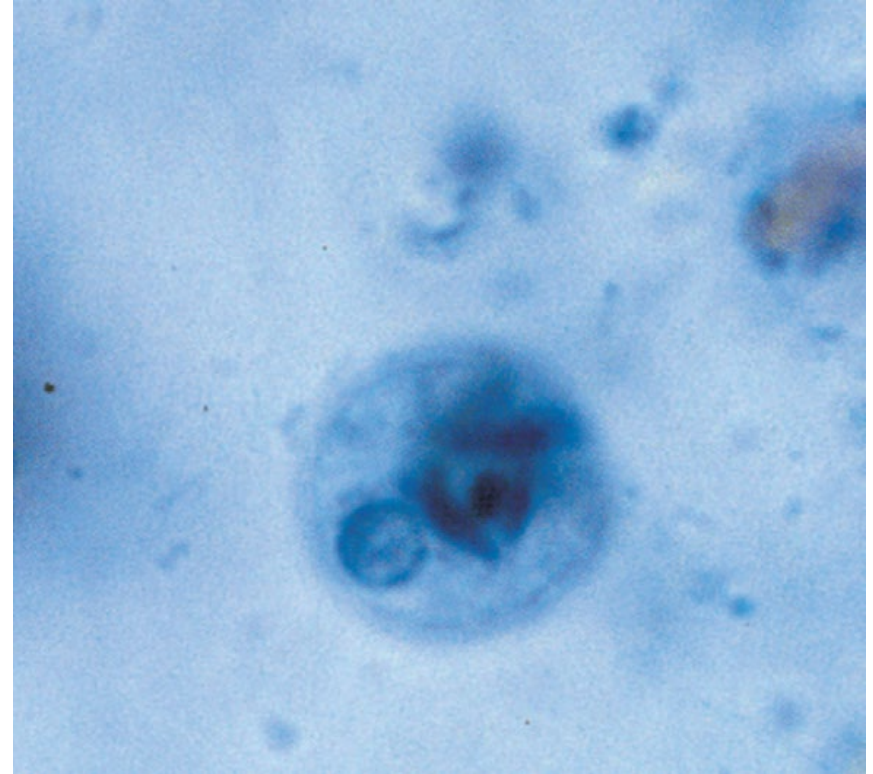
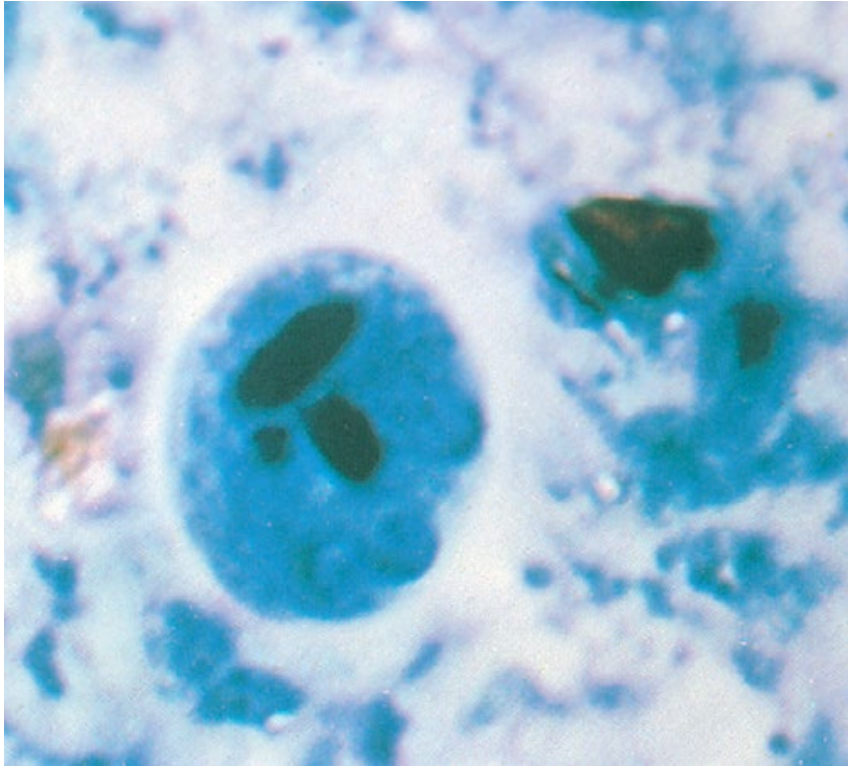




# Entamoeba histolytica cyst



# Entamoeba histolytica cyst



# Entamoeba histolytica

## A. Laboratory diagnosis of *Entamoeba histolytica*

### Intestinal amoebiasis

#### Stool examination

- Microscopy
- Macroscopy
- Iodine stained preparation
- Trichome stained preparations to demonstrate trophozoite or cyst

#### Stool culture

Media used

- Boeck and Drbohlav
- NIH polygenic
- Craig's
- Nelson's
- Robinson's

#### Mucosal scrapings

Wet mount

Stained preparation

#### Serodiagnosis

- IHA
- ELISA
- Latex agglutination test

#### Molecular diagnosis

- DNA probe

## B. Laboratory diagnosis of amoebic liver abscess

### Amoebic liver abscess

#### Microscopy

of pus or aspirate

#### Histopathological examination

of pus or aspirate

#### Serodiagnosis

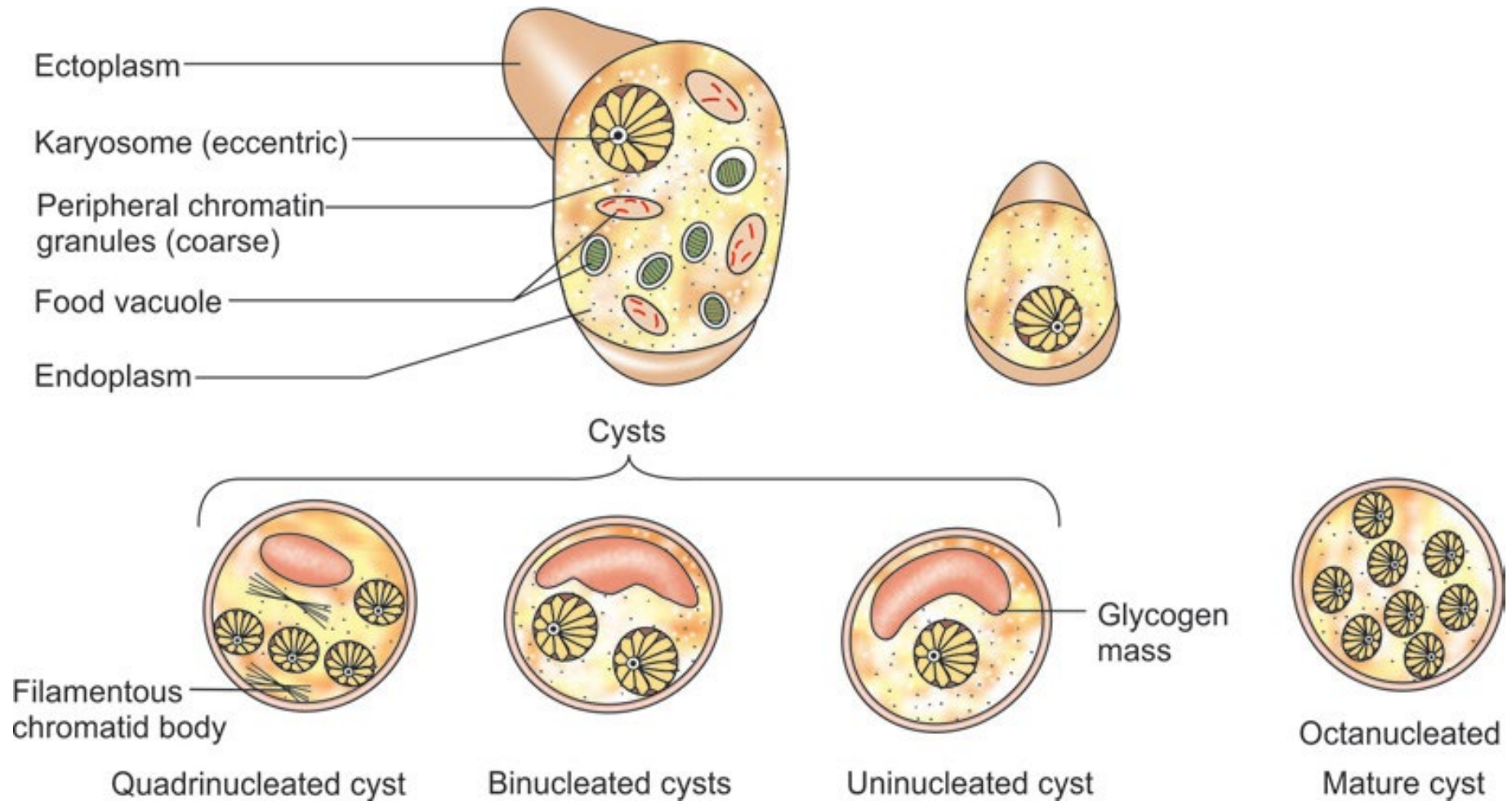
- IHA
- ELISA
- Latex agglutination test

#### Radiological examination

- X-ray
- USG
- CT scan
- MRI

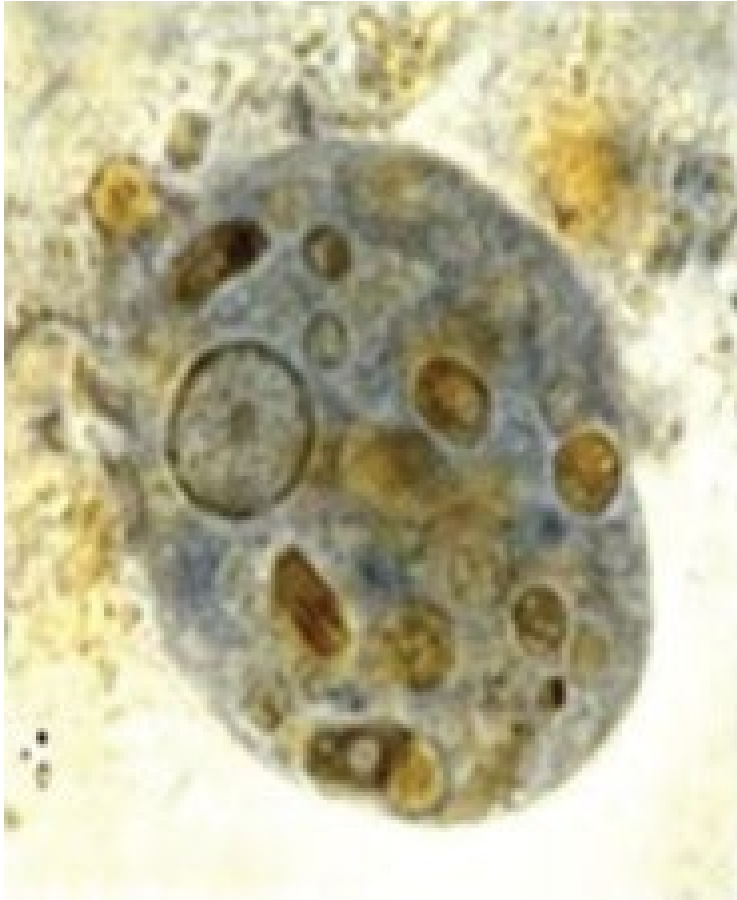
#### Stool examination

# Entamoeba coli



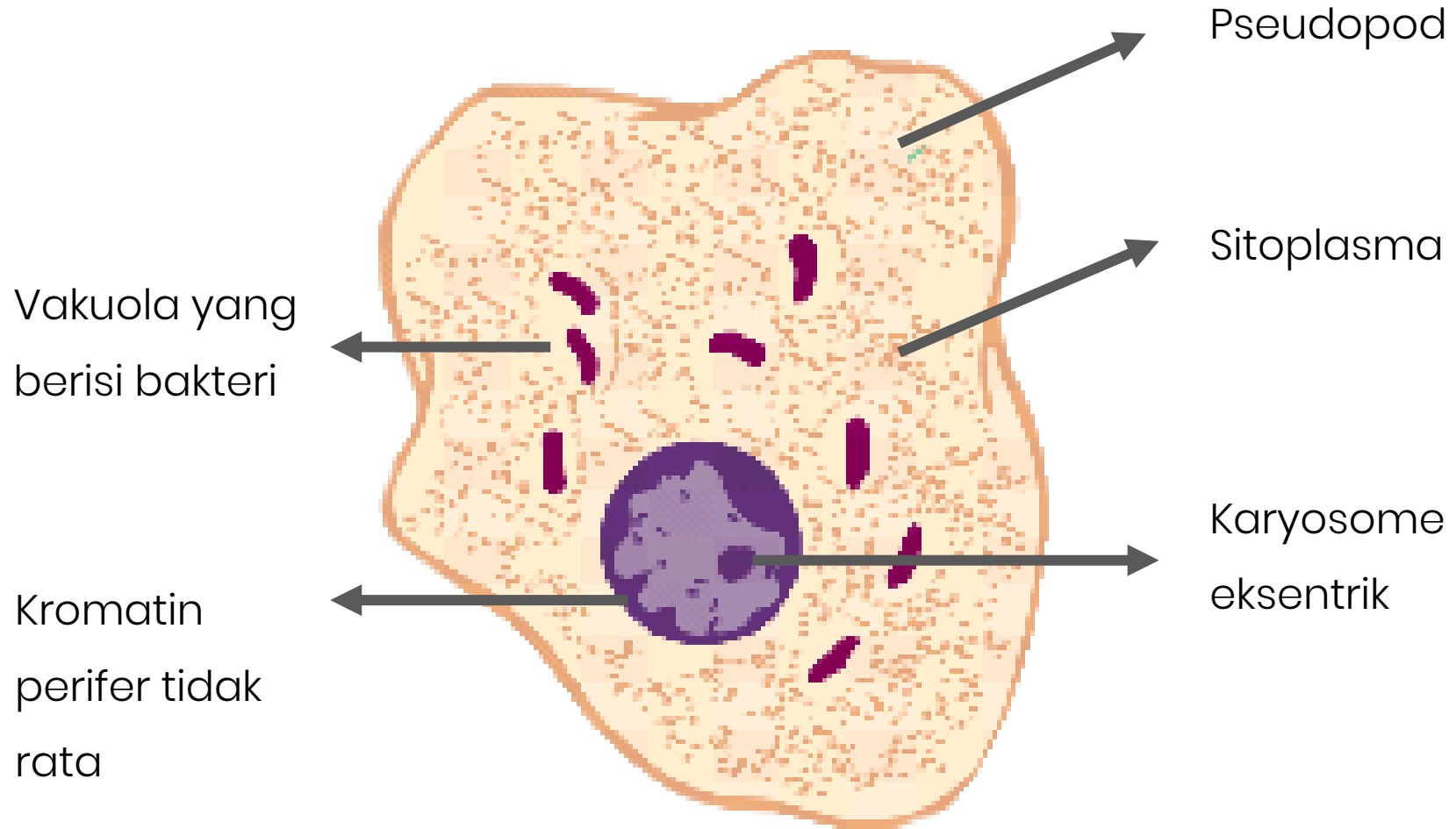


# Entamoeba coli trophozoite



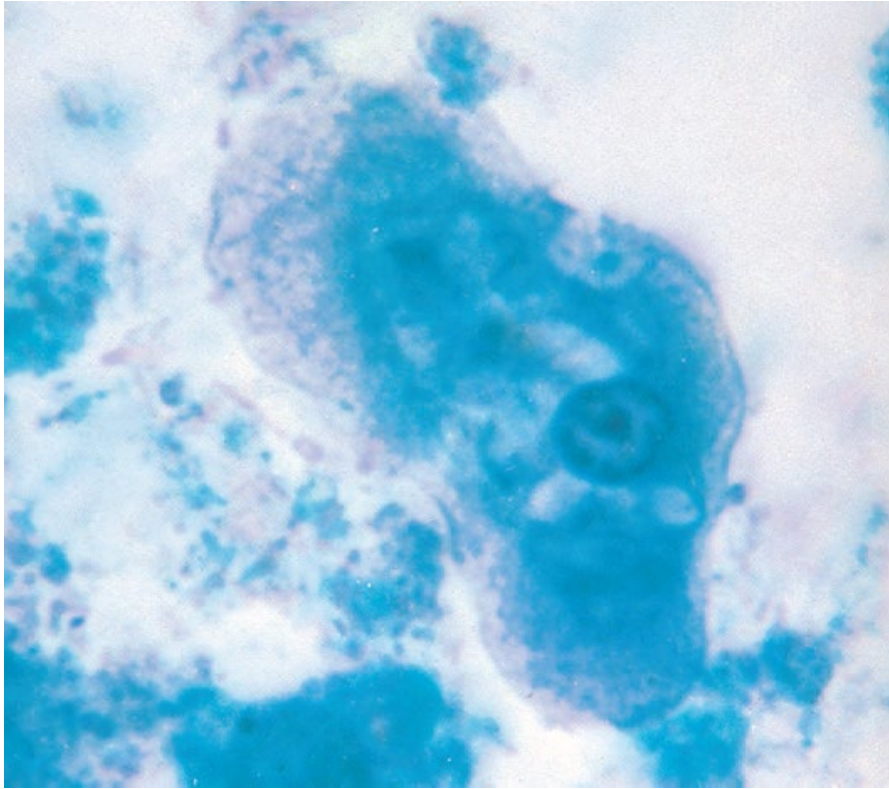
- Kisaran ukuran : 20 – 25 mikron,
- Jumlah inti : 1 – 4
- Karyosome : Besar & eksentrik
- Kromatin perifer : tidak merata
- Sitoplasma : Kasar bergranula
- Inklusi sitoplasma : Vakuola yang berisi bakteri

# Entamoeba coli trophozoite





# Entamoeba coli trophozoite

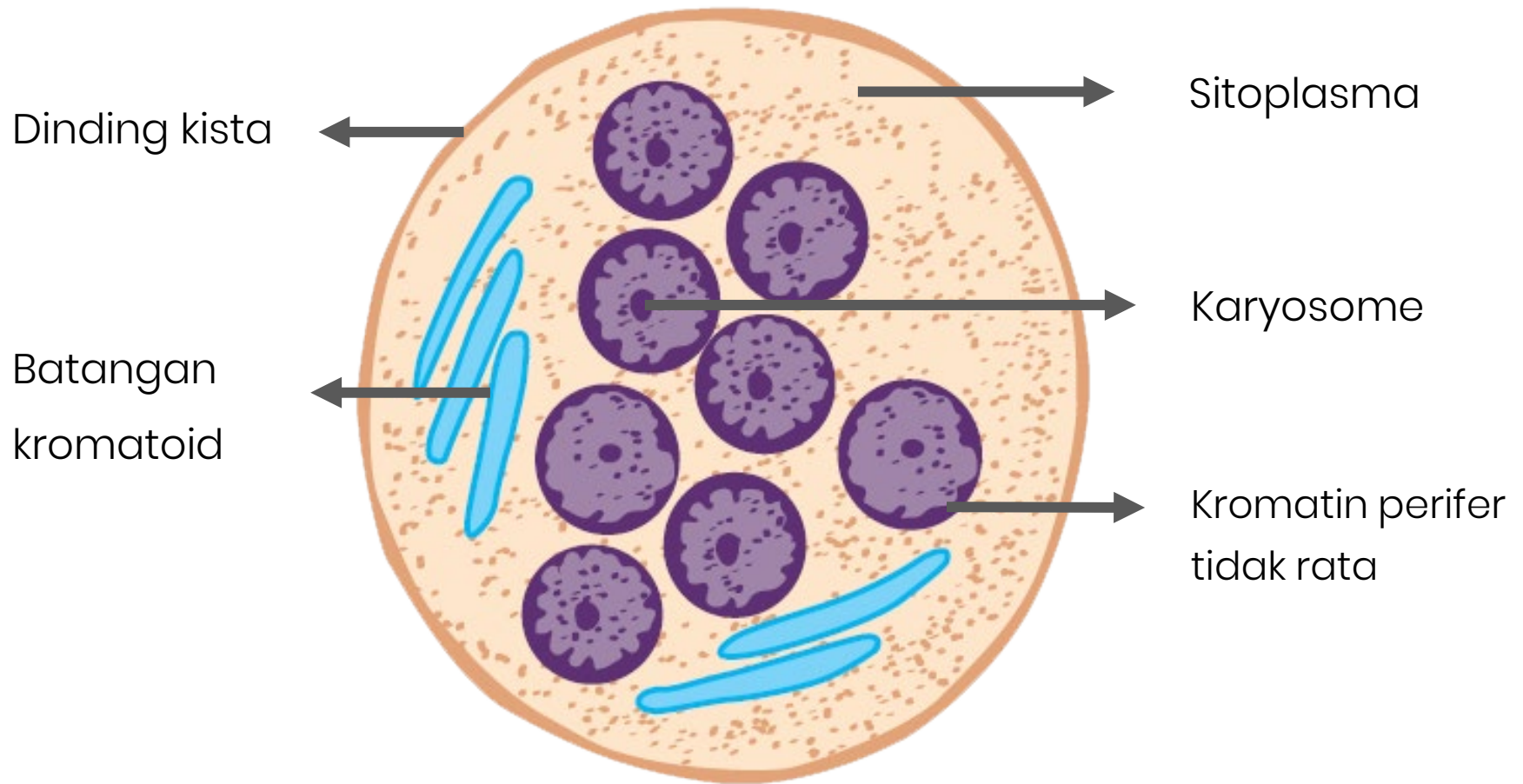


# Entamoeba coli cyst

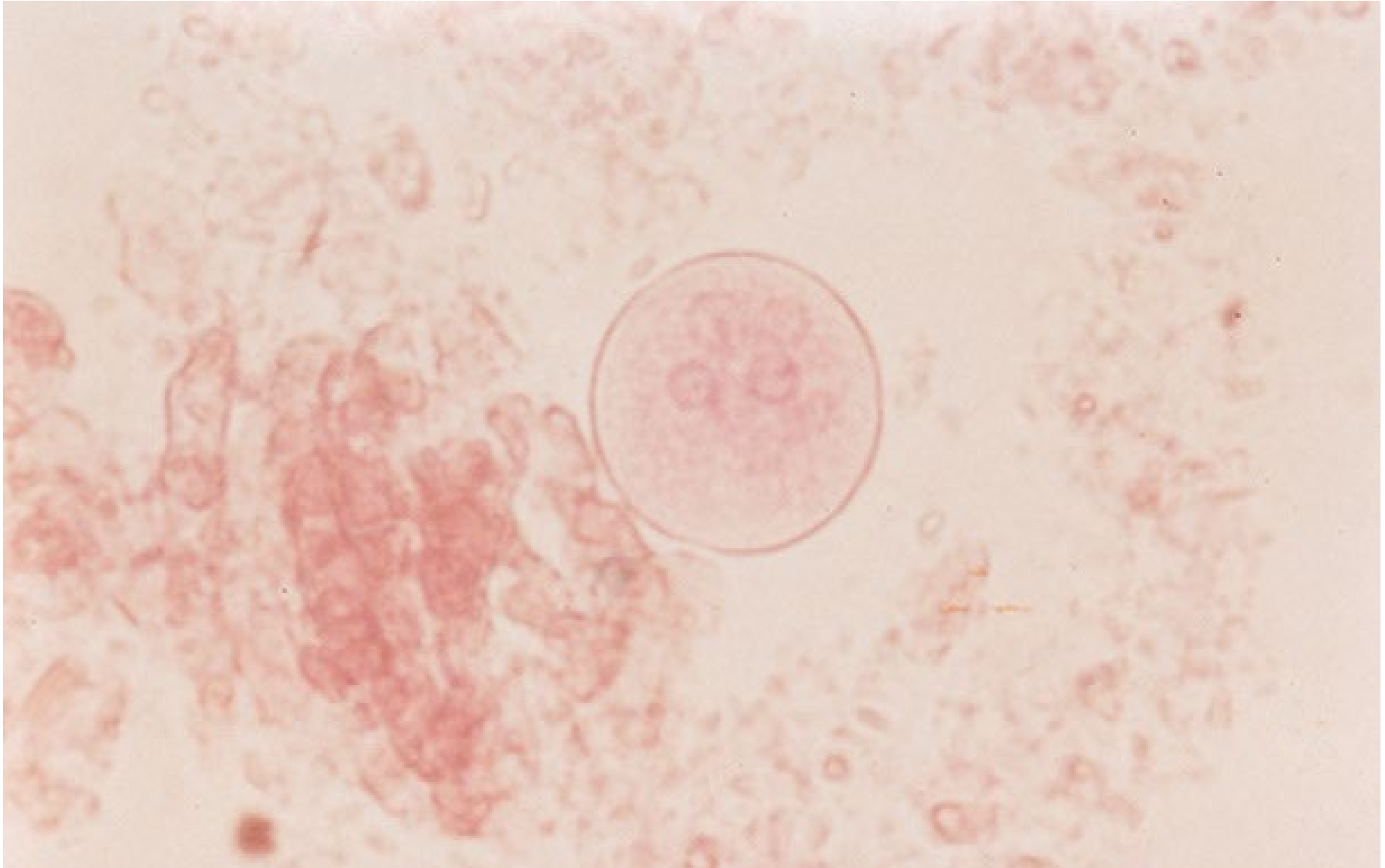


- Kisaran ukuran : 15 – 25 mikron,
- Bentuk : Bulat, bundar
- Jumlah inti : **1 – 8**
- Karyosome : besar eksentrik
- Kromatin perifer : Tidak merata
- Sitoplasma : Kasar berganula
- Inklusi sitoplasma : Massa glikogen di kista muda & Batang kromatoid tipis, ujung runcing di kista muda

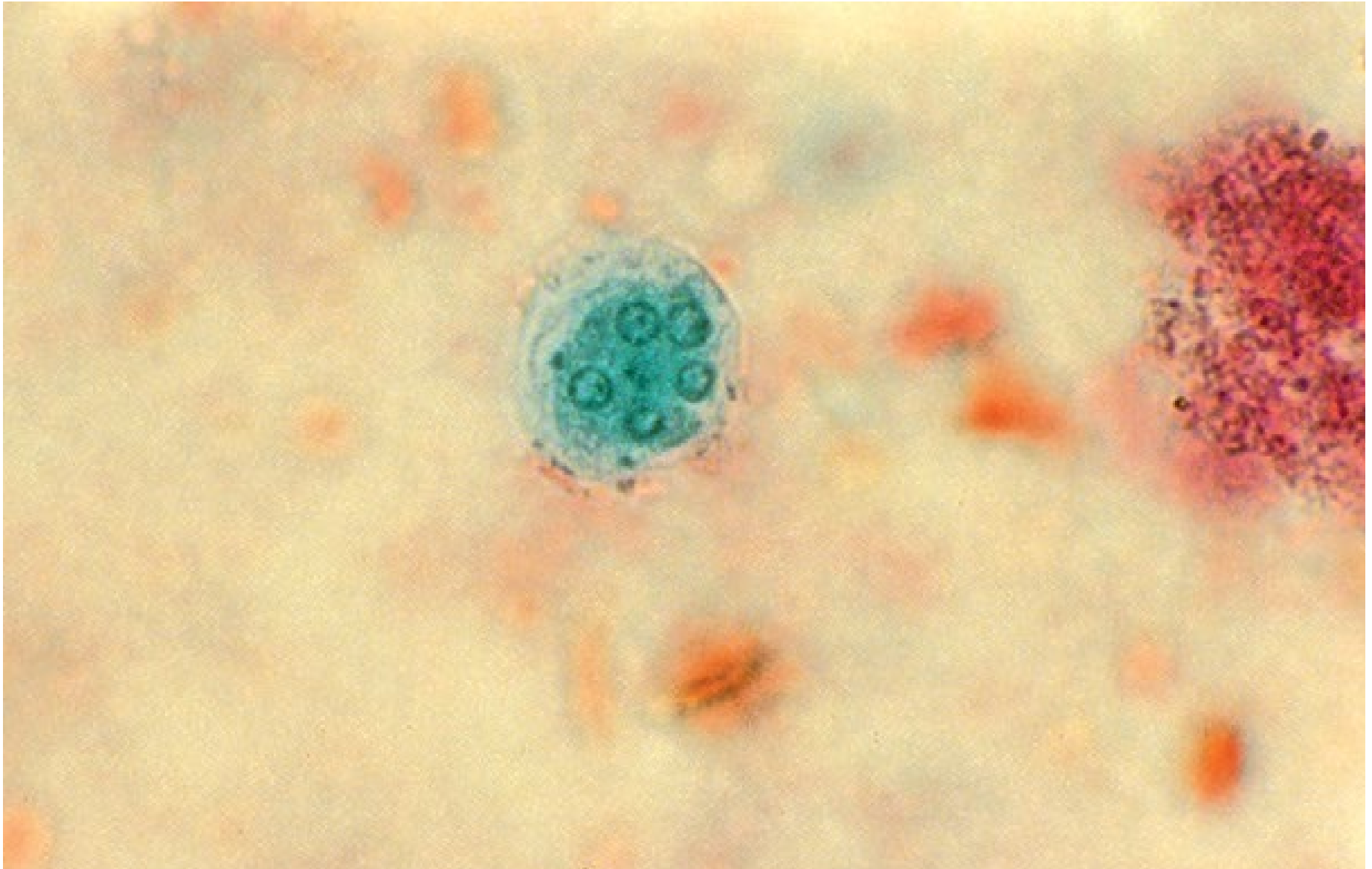
# Entamoeba coli cyst



# Entamoeba coli cyst



# Entamoeba coli cyst

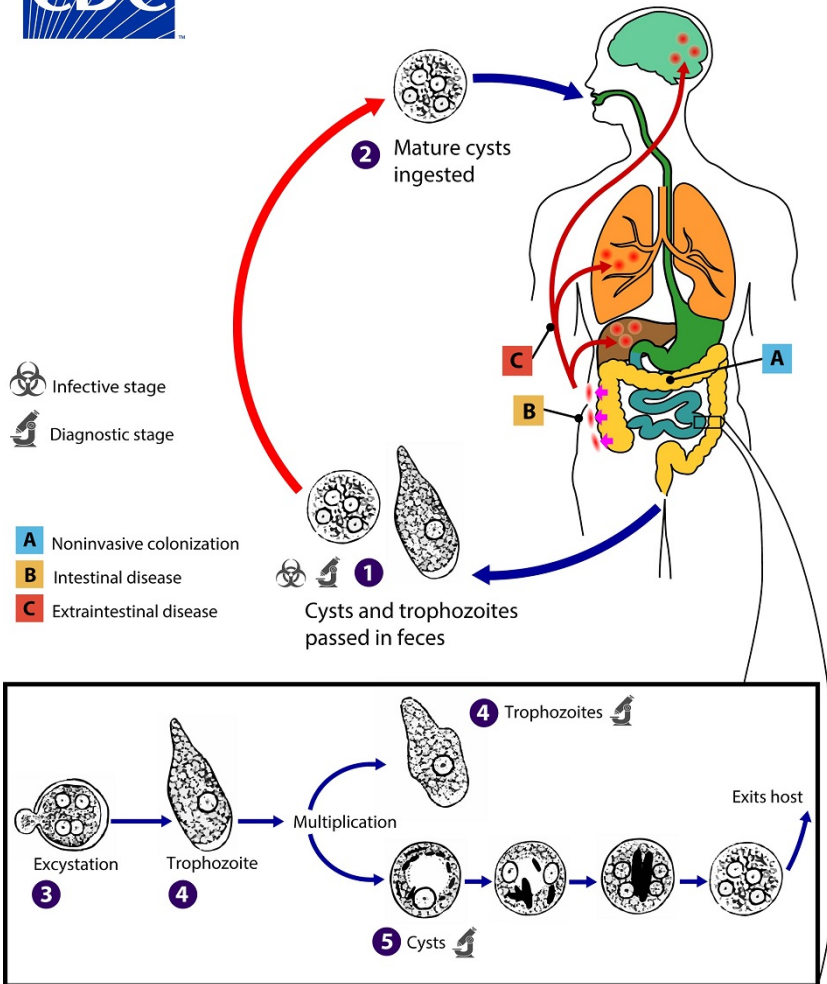




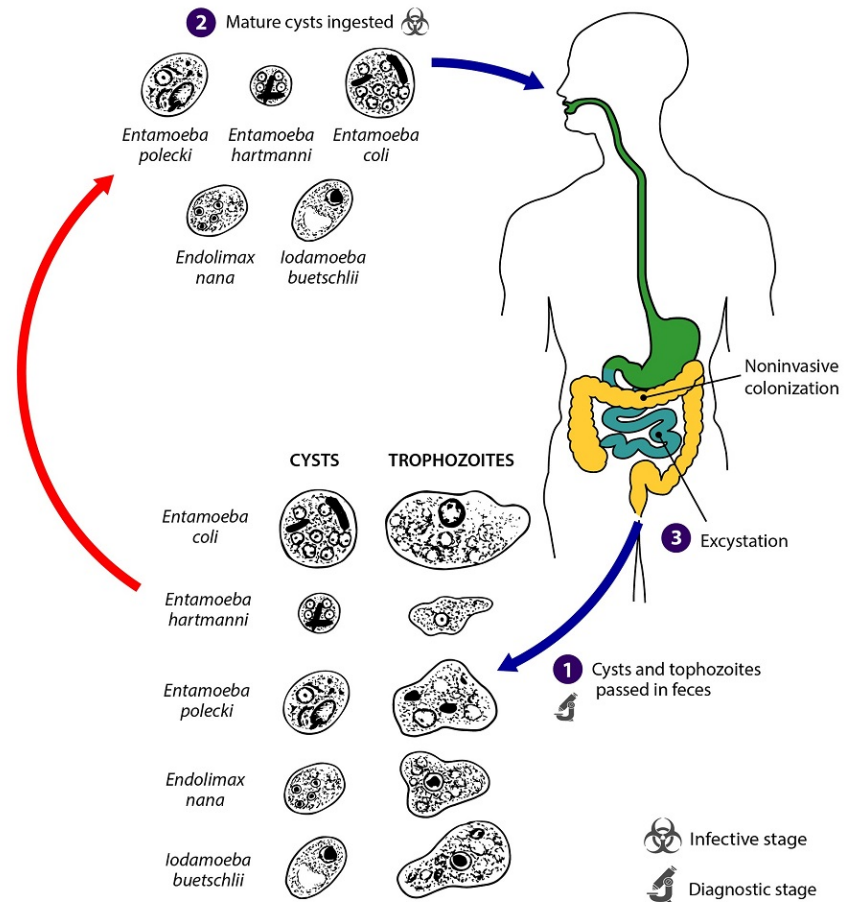
# Entamoeba



## Amebiasis



## Intestinal Amebae (Nonpathogenic)







# TERIMA KASIH

Sodikin Kurniawan

[www.sodiyu.my.id](http://www.sodiyu.my.id)

## PERTEMUAN 2

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