

Phylum: Ciliophora

class: kinetofragminophora

subclass: Vestibulifera

order : Trichostomatida

suborder: Trichostomatina

ex: Balantidium coli

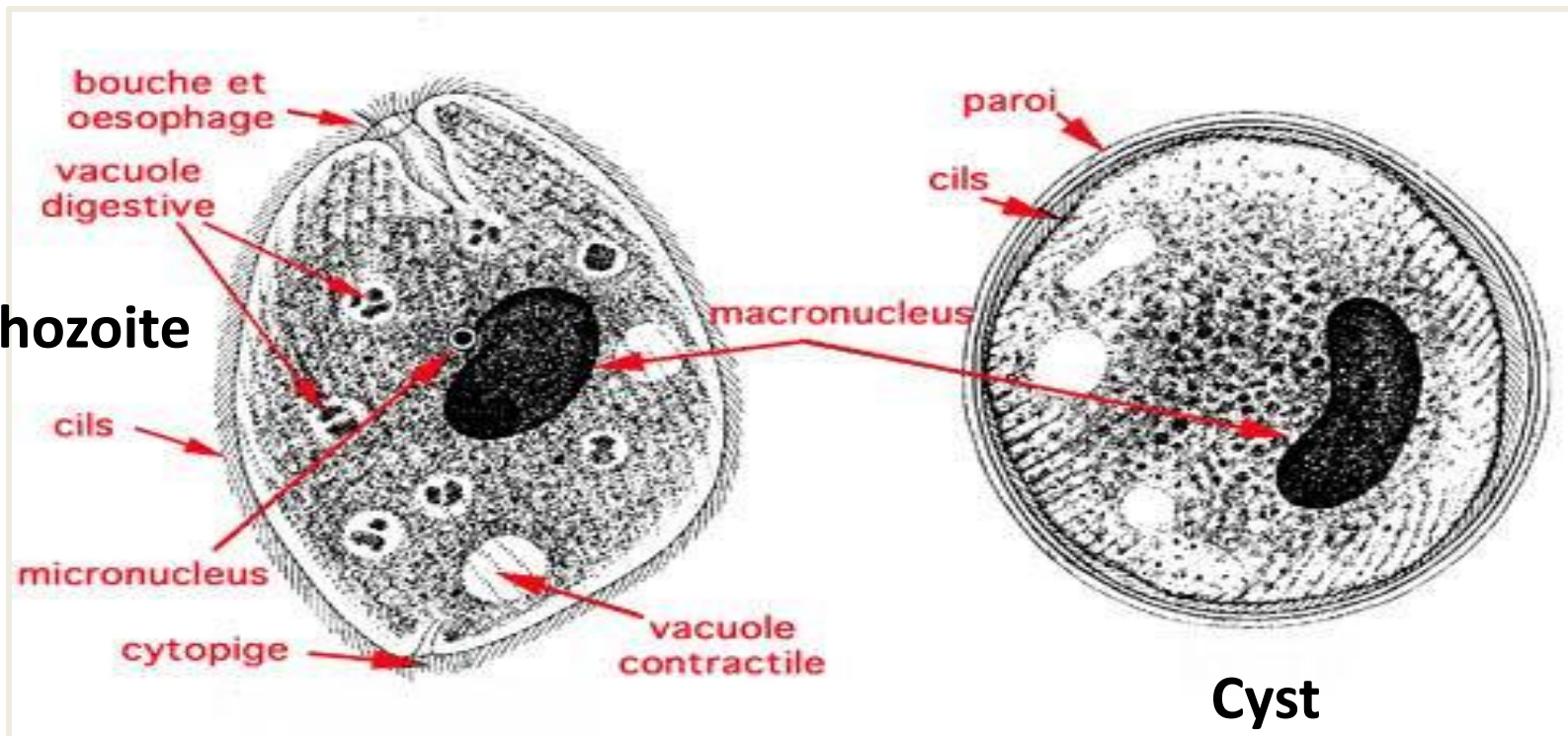
Balantidium Coli

- Diseases. Balantidiasis, balantidiosis, balantidial dysentery ,*B. coli* is the only member of the ciliate group that is pathogenic for humans, it is found in large intestine (cecum and ileum),Disease produced by *B. coli* is similar to amebiasis, because the organisms elaborate proteolytic and cytotoxic material .
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- B.coli* is the largest intestinal protozoan of humans.
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- The life cycle which can be divided into two stages Trophozoite and Cyst.

Trophozoite

- The size between 40 x 120 Mm ,ovoid in shape
- have cytostome locate at the anterior end as funnel-shape
- The body is covered with cilia
- Have Flattened on one side
- two nuclei,Macronucleus locate in the meddle of the body may be kidney shape, micronucleus is spherical and small ,lies close to the macronucleus
- Food vacuoles and contractile may be seen in the cytoplasm.

Trophozoite



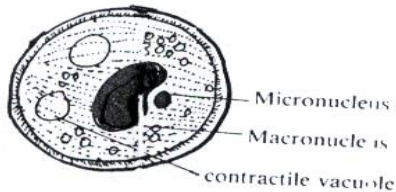
Cyst

Cyst

- The Size 50 x 75 Mm
- Have thick wall
- The macronucleus can be seen
- Other structure are not observed

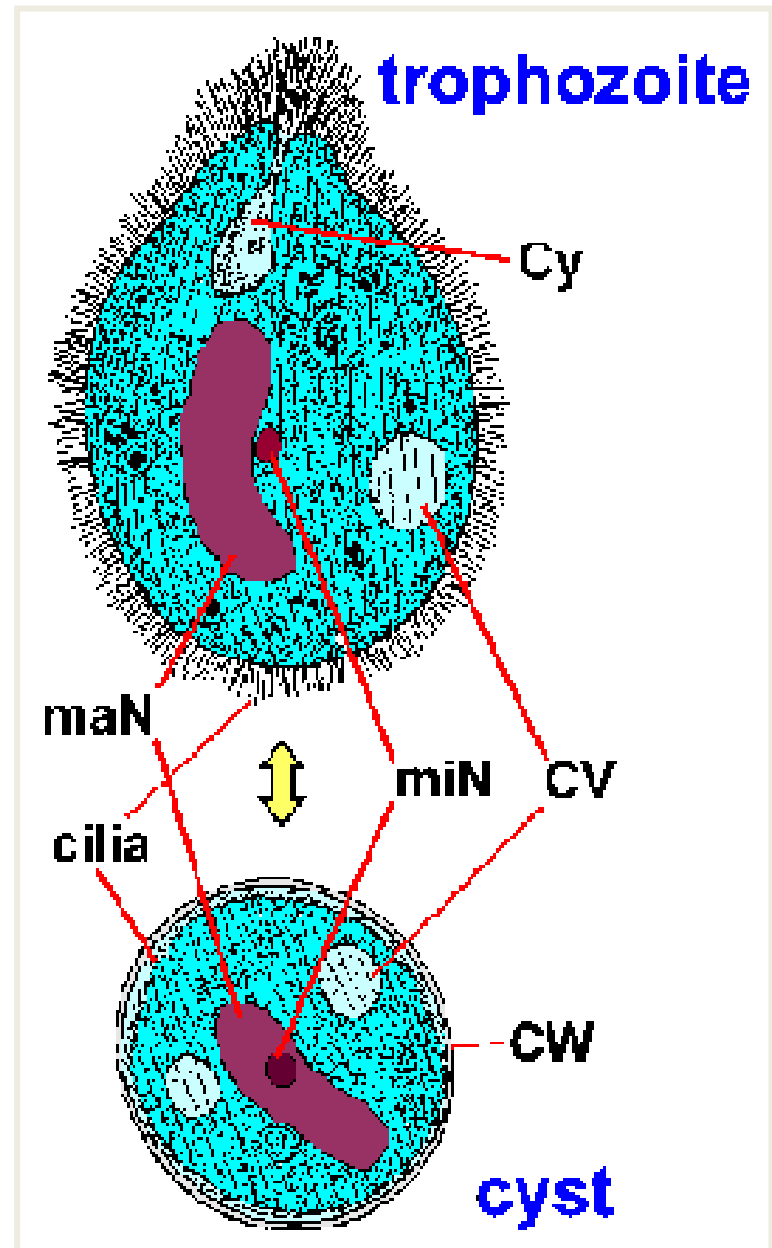


(a) Size of *B. coli* cyst compared with a hookworm egg.



(b) Enlarged *B. coli* cyst.

Fig 66 *Balantidium coli* cyst, spherical or oval in shape.



Balantidium coli

is the largest intestinal protozoan of humans.

Morphology : *B. coli* occurs into two stages Trophozoite and cyst.

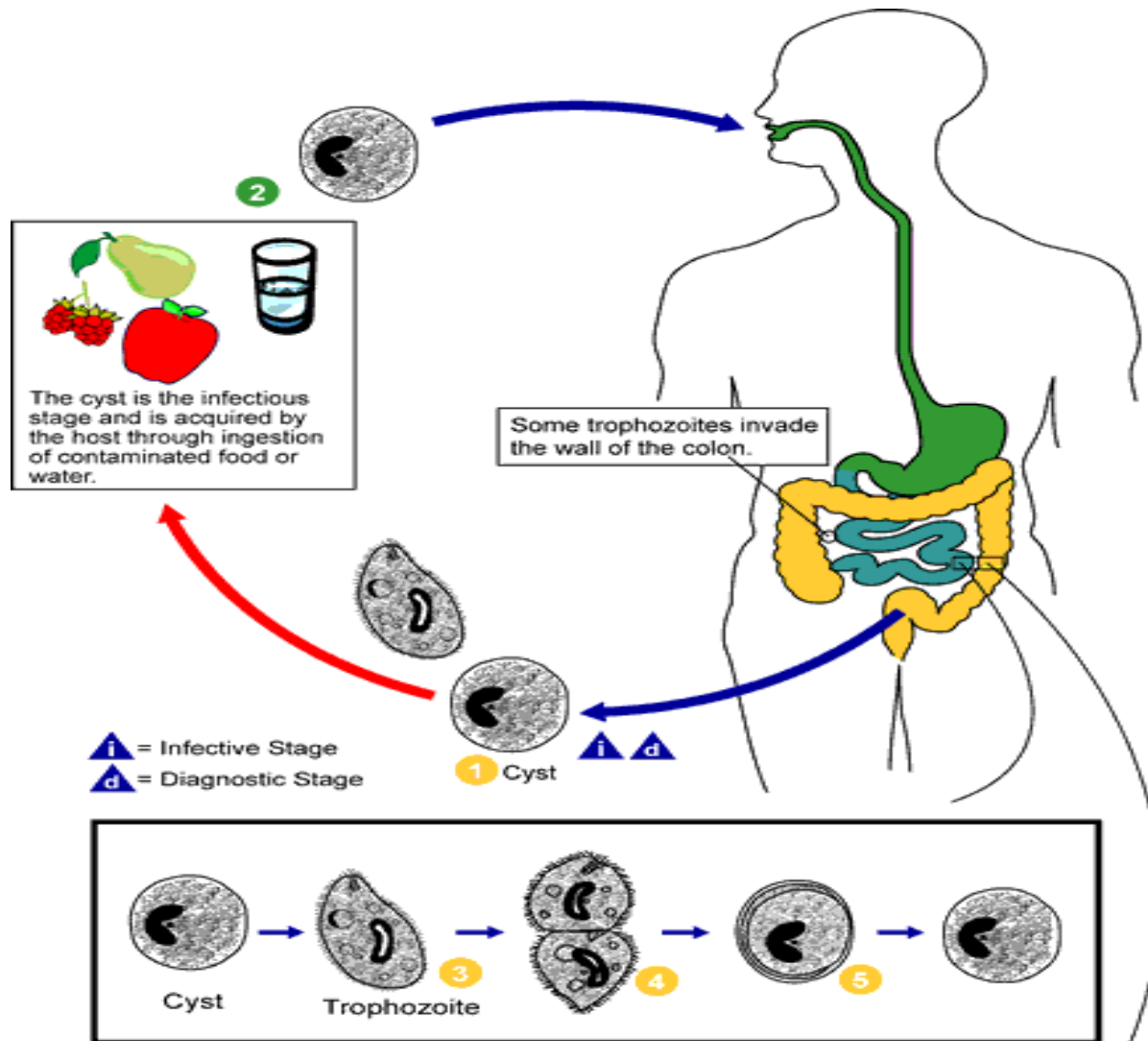
characters	trophozoite	cyst
size	two size range. The smaller (42-60um long by30-40um wide),the larger (80-120um long by60-80um wide)	The Size 50 x 75 Mm
shape	HaveFlattened on one side	Spherical or ellipsoid
motility	Rotary (like a thrown football)	Non motile
surface	ciliary covering which are especially long and stout near the cytostome	Covered with thick retractile double layered cyst wall with cilia some times visible underneath
nucleus	two nuclei,Macronucleus locate in the meddlie of the body may be kidney shape, micronucleus is spherical and small ,lies close to the macronucleus	one or two some time only macronucleus can be seen
Important cell structure in cytoplasm	Food vacuoles and 2contractile vacuoles may be seen in the cytoplasm ovoid in shape have cytostome locate at the anterior end as funnel-shape,cytopage in posterior end	1-2 contractile vacuoles may be seen in the cytoplasm of young cyst

- **Life cycle**

Cysts are the stage responsible for transmission of balantidiasis . The host most often acquires the cyst through ingestion of contaminated food or water . Following ingestion, excystation occurs in the small intestine, and the trophozoites colonize the large intestine . The trophozoites reside in the lumen of the large intestine and appendix of humans and animals, where they replicate by binary fission, during which conjugation may occur . Trophozoites undergo encystation to produce infective cysts . Some trophozoites invade the wall of the colon and multiply, causing ulcerative pathology in the colon wall. Some return to the lumen and disintegrate. Mature cysts are passed with feces.

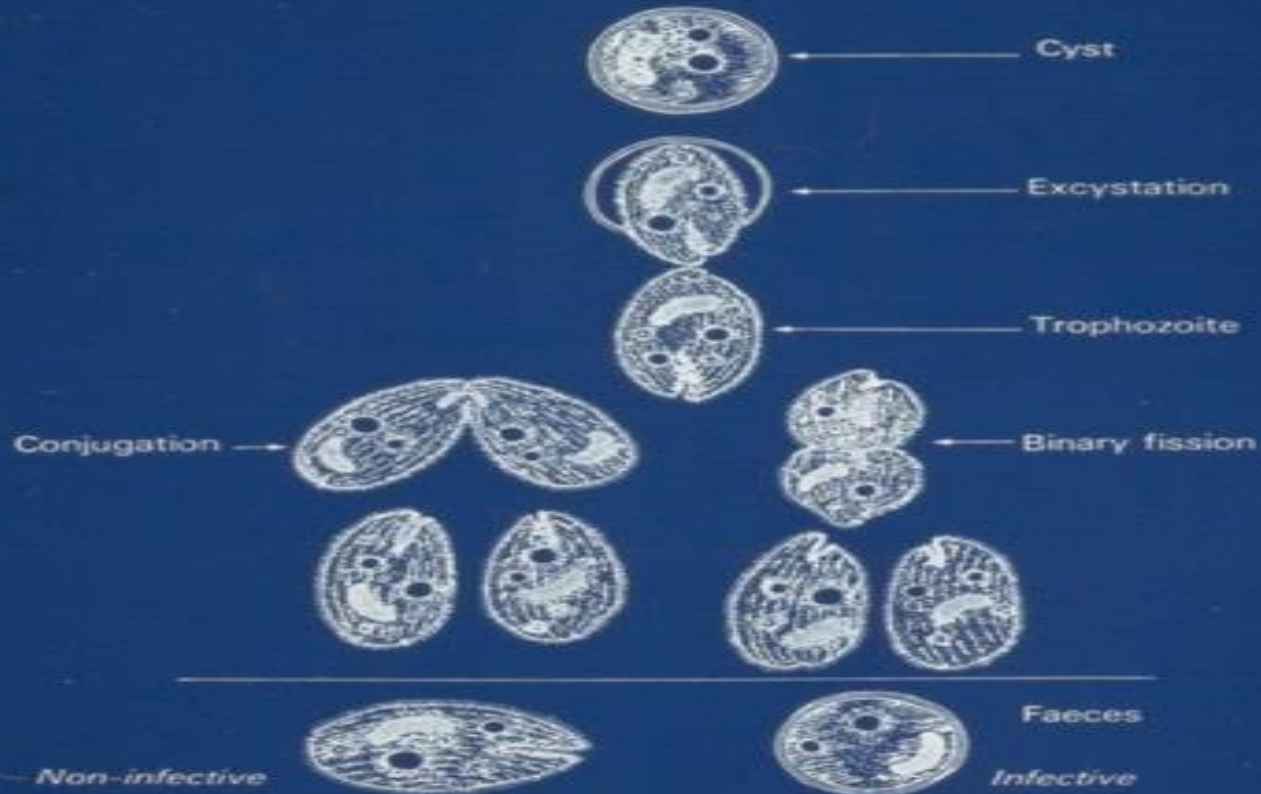
Swine (pigs)and (less commonly) monkeys are the most important reservoirs. Infections are transmitted by the faecal-oral route; outbreaks are associated with contamination of water supplies with pig feces.

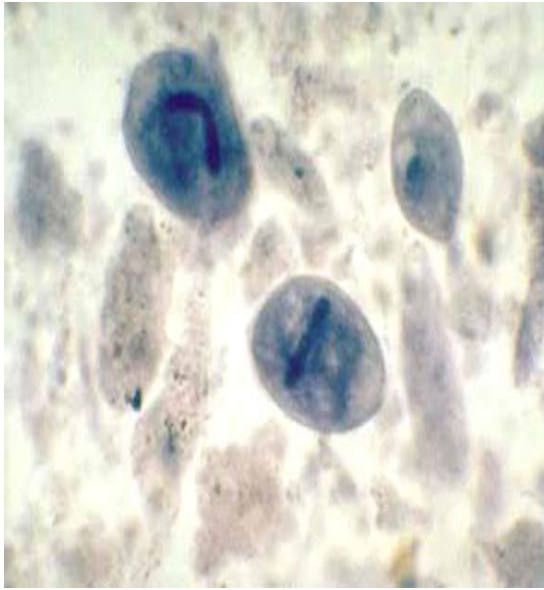
- Person-to-person spread, including through food handlers.
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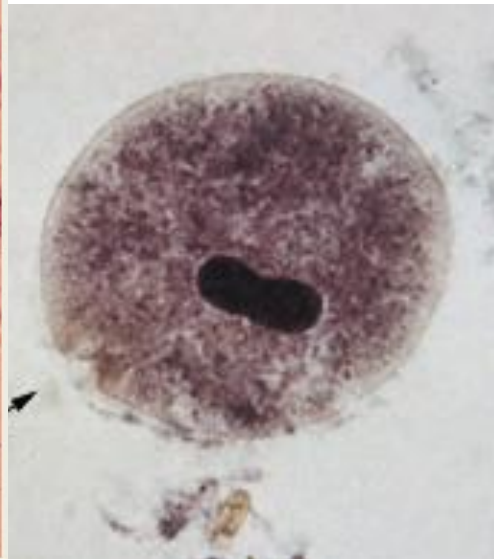
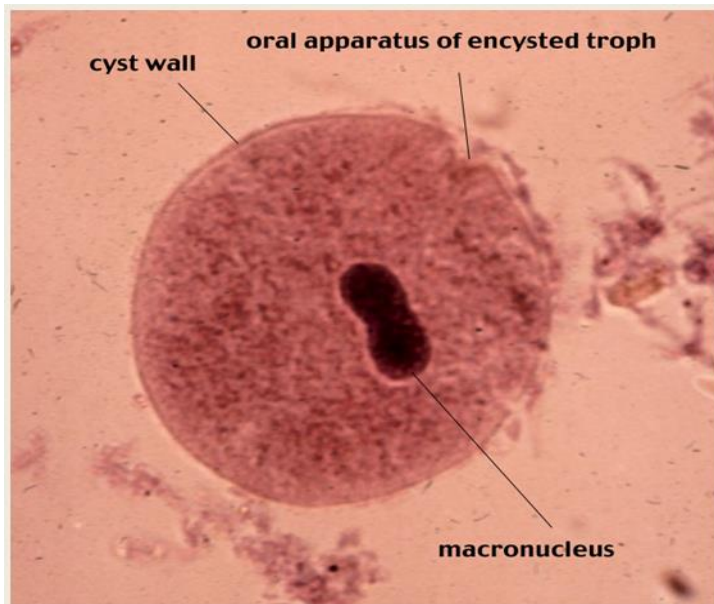
life cycle of *Balantidium coli*

Method of reproduction





B. coli Trophozoite, stool smear (60 – 200 μm)



B. coli Cyst stool smear (50 – 60 μm)

Laboratory Diagnosis •

Diagnosis is based on detection of trophozoites in stool samples from symptomatic patients or in tissue collected during endoscopy. •

Cysts are less frequently encountered, and are most likely to be recovered from formed stool. •

Balantidium coli is passed intermittently and once outside the colon is rapidly destroyed. Thus stool specimens should be collected repeatedly, and immediately examined or preserved to enhance detection of the parasite; concentration via sedimentation or flotation can increase the probability of recovery. •

Lugol's iodine is sometimes used for staining, but may obscure internal morphological features. •