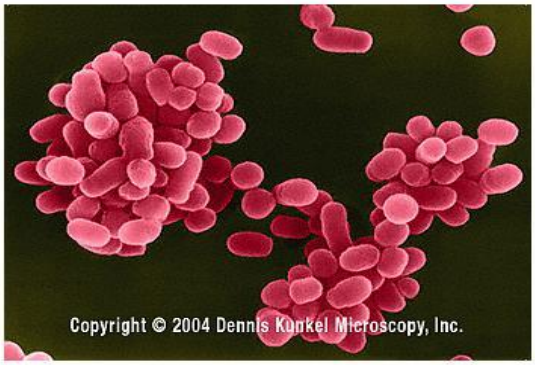
Brucella



Members of this genus are pathogenic to animals from which they are transmitted to man causing brucellosis or undulant fever or Malta fever.

The genus includes:

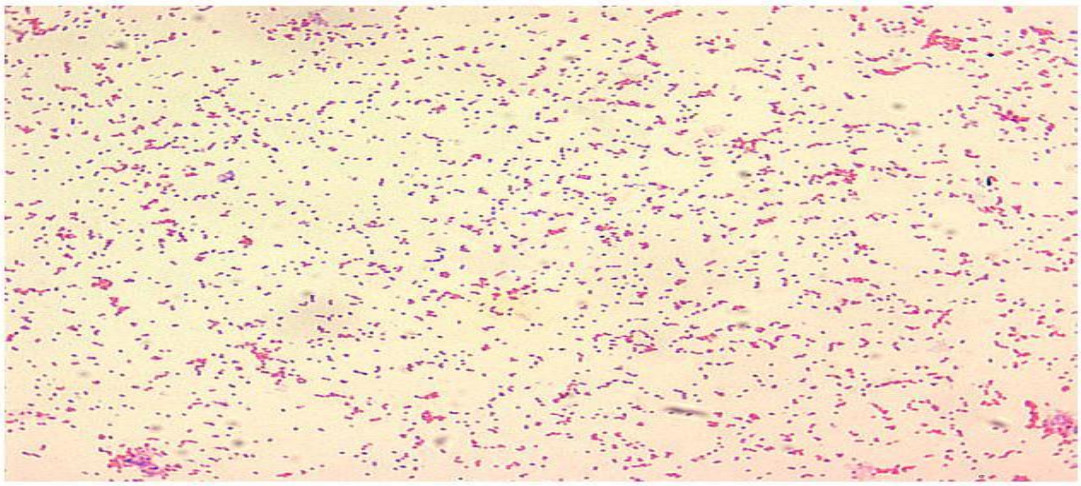
Brucella melitensis : causing infection in goats & sheep.

Brucella abortus: causing abortion of cattle.

Brucella suis: causing infection of pig.

Morphology:

Gram negative short bacilli, non capsulated, non motile and non sporing.



Culture characters:

Aerobic, optimum temperature 37°C, they grow on ordinary media, however, better growth is obtained on Liver – infusion or glucose serum agar & in the present of 10 - 20 % CO2 or Brucella agar.

Serological characters:

They all posses 2 antigens (A & M).

A is dominant in *Brucella abortus*.

M is doment in *Brucella melitensis*.

A & M are mostly equally present in *Brucella suis*.

Diagnosis:

1-Isolation of the organism from the blood by repeated by blood culture (on the media previously mentioned). Blood culture should not be discarded as negative before 4 weeks incubation.

2-Serological identification: by specific antisera.

NB:

Detection of Ab in the serum: these appear 10 days after the beginning of fever. By tube agglutination test; Titre 1/100 – 1/200 considered diagnostic significance.

3-The serum may contain incomplete antibodies which are tested for by Coomb´s antiglobulin test.

4-Brucellin test: This is an intradermal allergic test similar to tuberculin test. A killed brucella suspension is used for intradermal infection.

NB: Brucella is weak acid fast, stained with:

– Modified Ziehl – Neelson stain (appear red).

– kosters stain (orange red against blue black back ground).

Differetiation between Brucella species

	Inhibition of growth by		Required CO_2 for growth	HO_2
	Basic fuchsin 1/25000	Thionine 1/30000		
Brucella melitensis	No	No	No	No
Brucella abortus	No	Yes	Yes	Yes
Brucella suis	Yes	No	No	Yes

Malta or undulant fever:

This disease is characterized by undulant of fever that remains for 3-4 weeks alternating with a febrile period of a similar duration. Man is infected by consumption of infected cow meat or milk or goat milk. Farmers, butchers and hide porters are infected by coming in contact with sick or dead animal & their discharge. The organism can enter through abrasions in the skin or by inhalation. It is present in the blood stream during the febrile period.