

Francisella tularensis

Template:Infobox - bakterie *Francisella tularensis* is an aerobic, gram-negative, non-sporulating bacterium.

Morphology and physiology

The cell has the shape of a rod with a length of 0.7 µm. It is immobile, encapsulated, non-sporulating.^[1]

Cultivation

Francisella tularensis is difficult to culture, growing on blood agar with glucose and cysteine (cysteine, glutamine, histidine and thimine are important growth factors for the bacteria). Medium with coagulated egg yolks is also suitable; it multiplies well in the endothelium of the yolk sac of chicken embryos. The colonies are small and translucent at first, later opaque. Sugar fermentation is weak.



chocolate agar medium with *Francisella tularensis*

Toxins

Virulent strains have a surface antigenic complex called factor Vi; in the cell wall of *F. tularensis* is a low potent endotoxin, thermolabile toxic protein has also been isolated.

Disease

Francisella tularensis causes tularemia. Humans can be infected by transmission from rodents:

- bite by an infected tick
- water contaminated with feces or carcasses,
- when processing contaminated straw, hay or cereals.

Diagnostics

- For the cultivation we use material from the primary lesion, sputum, nodal puncture; in the bacteremia phase, we try to capture the microbe from the blood.
- Isolation on susceptible laboratory animals - after death, material from lesions is cultivated on agars.
- Immunofluorescence can be used for rapid diagnosis.

Links

Related articles:

- Tularemia

Sources:

- BEDNÁŘ, M, V FRAŇKOVÁ a J SCHINDLER, et al. *Lékařská mikrobiologie – bakteriologie, virologie, parazitologie*. 1. vydání. Praha : Marvil, 1996. 558 s. ISBN 80-238-0297-6.
1. BEDNÁŘ, Marek – SOUČEK, A – FRAŇKOVÁ, V. *LÉKAŘSKÁ MIKROBIOLOGIE : Bakteriologie, virologie, parazitologie*. 1. edition. Brno : Triton, 1996. 560 pp. pp. 255. ISBN 859-4-315-0528-0.