

Genus : Trueperella
old name (Arcanobacterium)

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Family</i>	<i>Genus</i>
<i>Actinobacteria</i>	<i>Actinobacteria</i>	<i>Actinomycetales</i>	<i>Actinomycetaceae</i>	<i>Trueperella</i>

Etymology:

Genus name: named after the German microbiologist Hans Georg Trüper
Species epithet: pus producing

Old Species Name(s):

Corynebacterium pyogenes,
Actinomyces pyogenes,
Arcanobacterium pyogenes.

Clinically important Gram positive bacilli

- **Spore forming**

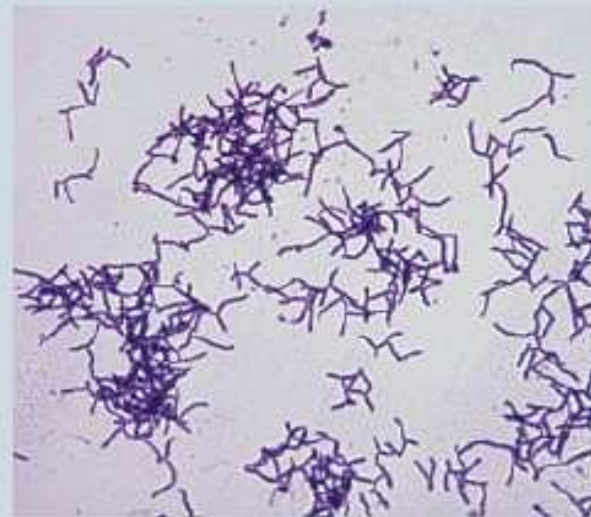
1. Bacillus
2. Clostridium

- **Non-spore forming**

1. Corynebacterium
2. Listeria
3. Lactobacillus

- **Bacilli with branching filaments**

1. Actinomyces
2. Nocardia



General characteristics

- The Arcanobacterium comprise a heterologous group of prokaryotes that have the ability to form gram positives ,branching filaments of less than 1 μm in diameter .
- Arcanobacterium genera includes: Trueperella ,Nocardia, ,Streptomyces ,Actinomadura and Dermatophilus

General characteristics

- The main animal pathogens in the Arcanobacterium are in the genera Trueperella , Nocardia and Dermatophilus.
- Fungi are eukaryotes and their filaments (hyphae) are always greater than 1 μm in width

General characteristics

- Nocardia is closely related to Corynebacterium, Mycobacterium and Rhodococcus but Trueperella differs from these in its DNA guanine /cytosine ratio and in the chemical composition of its cell wall

Natural Habitat

- The Arcanobacterium species are present on mucous membrane of the host animals, often in the oral cavity or nasopharynx .
- *Arcanobacterium pyogenes* is a commensal in the oral cavity of cattle.
- Nocardia species are soil microorganisms The pathogenic Arcanobacterium have a worldwide distribution.

Pathogenicity

Arcanobacterium species

- Infections by these organisms tend to be endogenous and most of the species cause **Polyogranulomatous reactions** in animal tissues.
- *Acanobacterium pyogenes* (formerly *Actinomyces pyogenes*) often cause severe **clinical mastitis characterized** by thick, purulent secretion.

Pathogenicity

- Sources include wound infections, teat injuries, udder infections, abscesses, and genital tracts.
- Spread appears due to contact of teats with a contaminated environment, such as calving areas and dry cow housing.
- Mastitis caused by *A. pyogenes* is more common in humid weather.

Pathogenicity

- *Arcanobacterium pyogenes* also gains access to the alveolar region of the jaw in cattle from the oral cavity, probably through trauma to the mucosa.
- It initiates a rarefying osteomyelitis and soft tissue reaction, the condition being referred to as **(lumpy jaw)**.

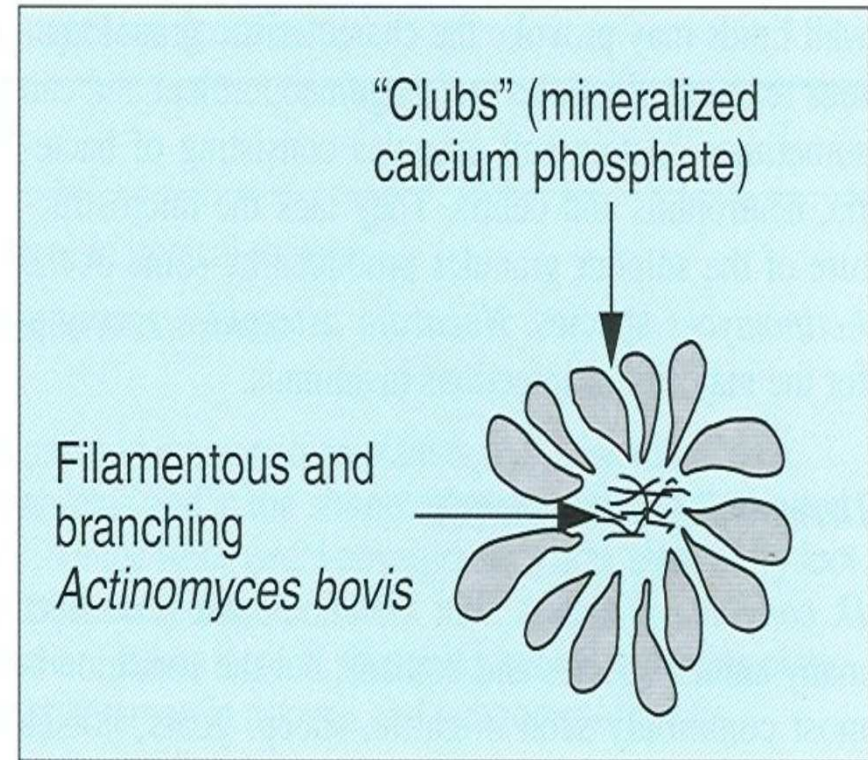




Pathogenicity

- Bacterial colonies form in the tissue with clubs of mineralized calcium phosphate forming around them to create microscopic (club colonies) or (**rosettes**)

- Fig:1.the result of phosphates activity and is a host reaction to a chronic infection. Granulation ,mononuclear infiltration and fibrosis occur in the lesions with sinus tract leading to the outside Exudate form the tracts contains pus with (sulphur granules) that are about 1-2 mm in diameter , within which club colonies can be found in the granules are crushed and examined microscopically .



Lab Diagnosis

- **Specimens** – open biopsy, aspiration material containing Sulphur granules (yellowish mycelial masses)



Nocardia species

***Genus* : Nocardia**

Nocardia species

General characteristics

- Named after Edmond Nocard, in 1888 described the organism in cattle with bovine farcy. There is another name (L-form bacteria) bacteria lack classical cells wall composition

Bovine Nocardiosis

❖ Bovine mastitis,
❖ cutaneous-
subcutaneous abscesses,
❖ and pneumonia in
companion animals are
the most common
clinical manifestations of
Nocardiosis





ERROR: ioerror
OFFENDING COMMAND: image
STACK: