

**Second stage – LAB. 13**

# *Listeria*

*Listeria* species are slender, short, Gram-positive rods. They do not form spores. Sometimes they occur as diplobacilli or in short chains, and they are avid intracellular parasites that may be seen within host cells in tissue samples. *Listeria* species are catalase-positive, and display a distinctive tumbling motility by light microscopy in liquid medium, which is most active after growth at 25°C; these characteristics distinguish it from *Streptococcus* (catalase-negative) or *Corynebacterium* (nonmotile) species, both of which may be confused morphologically with *Listeria*. *Listeria* species grow facultatively on a variety of enriched media.

## **- Epidemiology**

*Listeria monocytogenes* is the only species that infects humans, although the *Listeria* species are widespread among animals in nature. *Listeria* infections, which may occur as sporadic cases or in small epidemics, are usually foodborne.[Note: *L. monocytogenes* is capable of growth at 4°C, thus refrigeration does not reliably suppress its growth in food.] One to fifteen percent of healthy humans are asymptomatic intestinal carriers of the organism. *Listeria* infections are most common in pregnant women, fetuses or newborns, and in immunocompromised individuals, such as the elderly or patients receiving corticosteroids. Blood cultures are indicated in pregnant febrile women when no alternate pathology (for example, urinary tract infection) is readily detected.

## **Other Non-Spore-Forming, Gram-Positive Rods:**

## **Actinomycetes**

Actinomycetes are a group of filamentous, branching, gram-positive organisms that easily fragment into slender rods. Although they superficially resemble fungi on morphologic grounds, they are prokaryotes of bacterial size. They are free-living, mostly soil organisms that are related to corynebacteria and mycobacteria, as well as to the *Streptomyces* that are sources of important antibiotics.

*Actinomyces israelii*, *Arachnia propionica*: *A.israelii* and *A.propionica* are part of the normal oral and intestinal flora in humans. They are strict anaerobes.

**-Actinomycetoma** is a chronic, granulomatous infection of the skin and subcutaneous tissue caused by Actinomycetes.

**-Actinomycosis** is a long-term (chronic) bacterial infection that commonly affects the face and neck. **Treatment:** Penicillin G is the treatment of choice for Actinomycosis, although a number of antibiotics (clindamycin, erythromycin, and tetracycline) have been shown to have clinical effect. Treatment must be sustained for weeks to months and may be accompanied by surgical debridement and/or drainage. No significant resistance to penicillin G has been reported.