

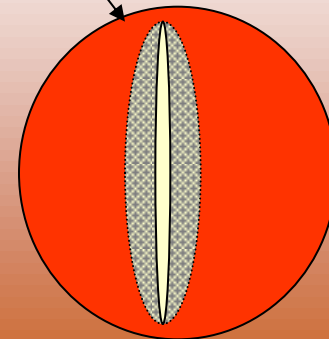
# Haemophilus

**Morphology:** G- pleomorphic rods, facultative anaerobe



## **Cultivation:**

- Is dependent on growth factors haemin (X) and NAD (V)
- They are not able to grow on **BA**, growth factors must be released by *S. aureus* and haemophilus grows around *S. aureus* (satellite phenomenon)
- Grows also on Levinthal agar in little transparent colonies or on chocolate agar (CHA)



# *H. influenzae*

**Biochemistry:** indol formation, urease, ornitindekarboxylase

**Factors of virulence:** capsule - 6 serotypes (a-f), the highest pathogenicity b

**Pathogenicity:**

Capsuled strains:

serotype b: faryngitis, sinusitis, otitis, epiglottitis (children 2-5 years), meningitis

other serotypes: faryngitis, pneumonia, sinusitis

notcapsuled strains: light respiratory infections

**Therapy:** amoxycillin, co-amoxicillin, cotrimoxazol, macrolides, cefalosporins

In epiglottitis: sitting + wet cold air

Meningitis: cefalosporins 3<sup>rd</sup> generation

**Prevention:** vaccination of children

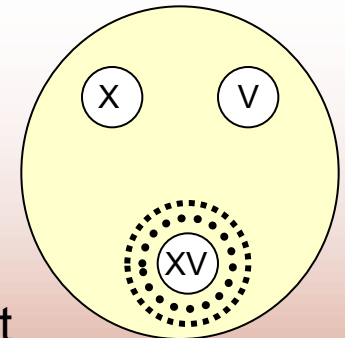
**Cultivation and detection:** **CHA**,

satellite phenomenon on **BA** in presence of *S. aureus*,

depression of normal flora via bacitracin,

Detection of a type due to growth factors (XV factor)/porphyrine test

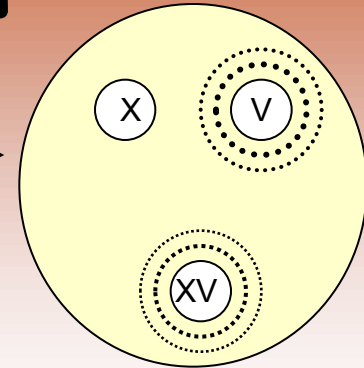
latex. agglutination (cerobrospinal fluid, serotype detection)



# Other haemophili

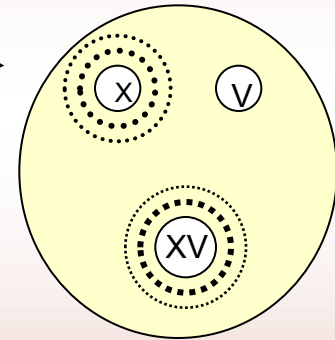
## *H. parainfluenzae*

Light resp. infections, needs factor V



## *H. aphrophilus*

Causes light resp. infections, needs factor X



## *H. ducreyi*

Causes ulcus molle

*Haemophilus parainfluenzae*, *h. aphrophilus*, *h. paraaphrophilus*  
(+Actinobacillus+ Cardiobacterium+Eikenella+Kingella) can cause  
endocarditis - **HACEK**

# *Pasteurella multocida*

**Morphology:** G- pleomorphic rods, facultative anaerobe



**Cultivation:** on BA forms little transparent watery colonies, Levinthal agar, CHA

**Pathogenicity:** light respiratory infections, wound infections

**Therapy:** ampicillin, fluoroquinolones, tetracycline

! Dg. sign: resistance to vancomycin, susceptibility to pnc

**Cultivation and diagnosis:** CHA, BA, biochemistry

**Epidemiology:** present in mouth of animals, often in wounds bitten by cat or dog.




# *Pseudomonas*

*P. aeruginosa*



**Microscopy:** G-rods with capsule

**Cultivation:** on BA pearled shine colonies with haemolysis, various pigments, smells like yasmine

**Biochemistry:** oxidase +, catalase + 

**Factors of virulence:** capsule, slime, enzymes, haemolysins

**Pathogenicity:** wound infections (in burns), urinary tract infections, nosocomial infections and sepsis in immunocompromised patients

**Therapy:** often multiresistant strains, antipseudomonade penicillins, cephalosporins of 3<sup>rd</sup> and 4<sup>th</sup> generation, carbapenems, aminoglycosides, fluoroquinolons

**Lab. detection:** direct - cultivation and microscopy, biochemistry

**Other pseudomonades:** biochemical detection, typical resistance to ATB

*Burkholderia cepacia* – colonisation of lungs in cystic fibrosis patients, urinary infections

*Stenotrophomonas maltophilia* – catheter sepsis, ventilatory pneumonias (VAP)

**Other G-nonfermenting bacteria (biochemical identification)**

*Acinetobacter calcoaceticus/baumanii* - oxidase negative, immobile, resistant, similar spectrum of diseases like *P. aeruginosa*