

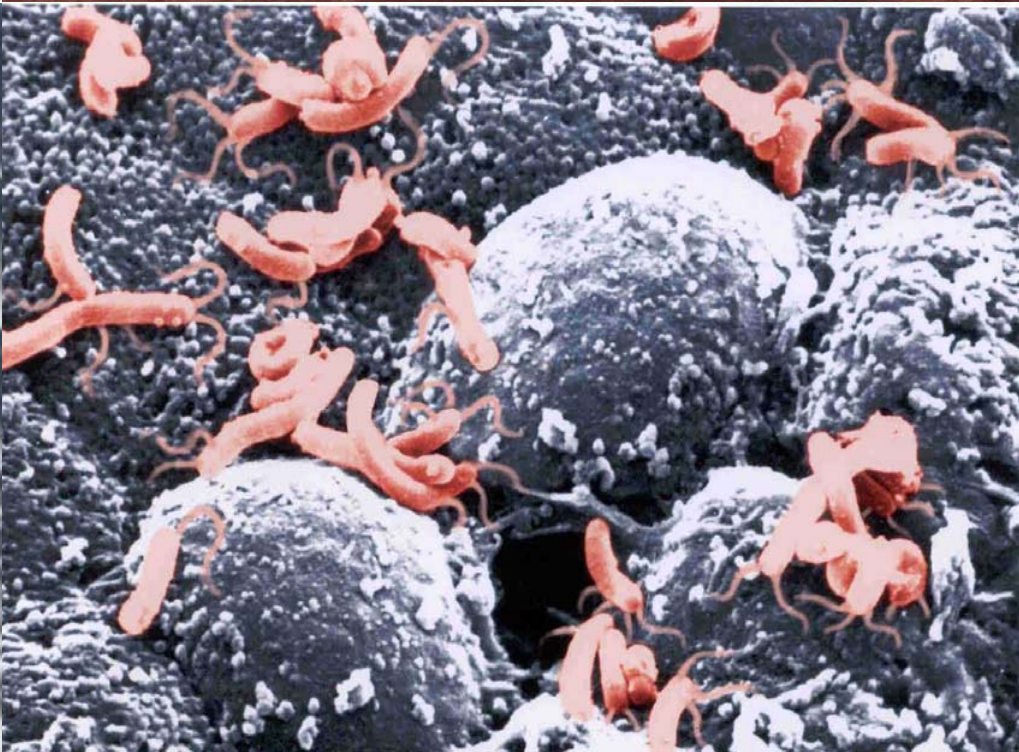
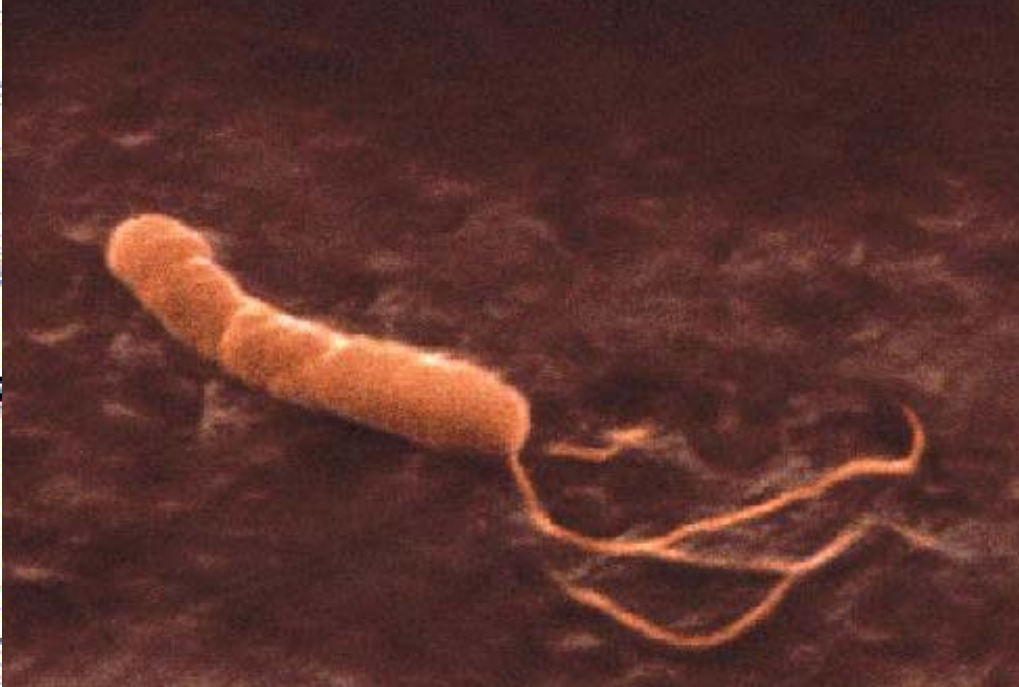


## **Chapter 16**

# **helicobacter**



- ***Helicobacter pylori*** is associated with antral gastritis (胃窦炎), gastric ulcers (胃溃疡), and gastric carcinoma (胃癌)





# 1. Biological Properties

- **G<sup>-</sup> rod, curved,**
- **Very motile → corkscrew motion**
- **Microaerophilic**
- **Urease production**



## 2. Pathogenicity

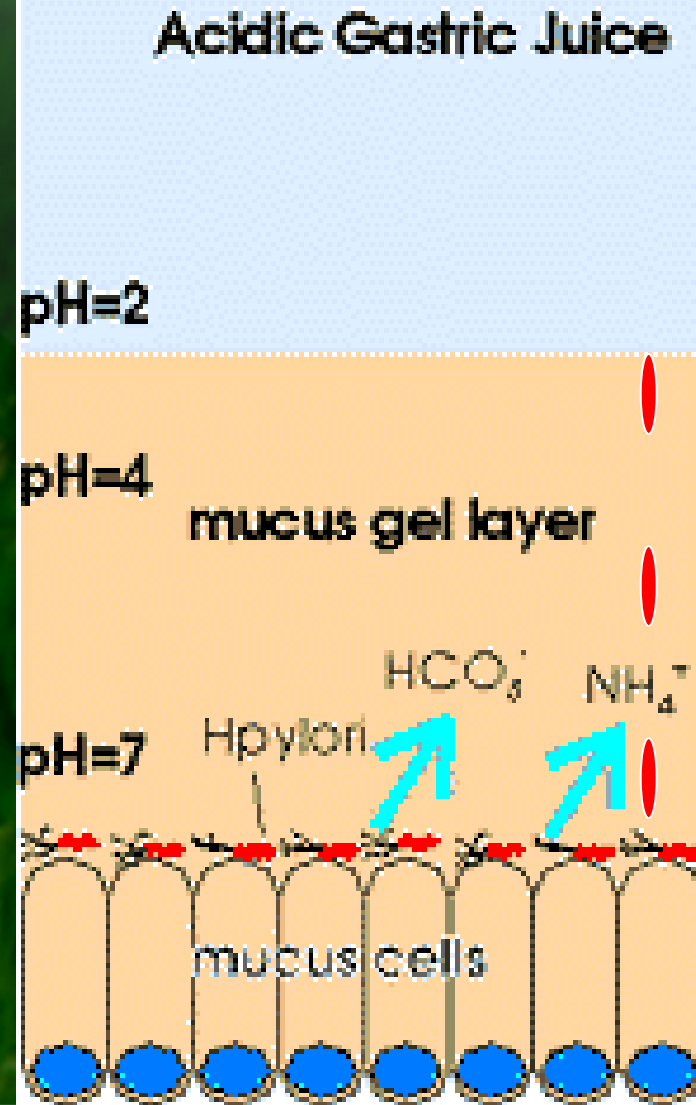
- **VacA (vacuolating cytotoxin A)**
- **Urease**
- **Flagella**
- **Pili**



# Pathogenesis

Motility – it moves into the mucus and produces adhesin on gastric epithelial cells (not intestinal epithelial cells)

Urease production, breaks down the urea to ammonia which buffers the pH around the bacterium.





# Pathogenesis

- *H. pylori* invade the epithelial cell surface
- Toxins and LPS may damage the mucosal cells
- $\text{NH}_3$  produced by the **urease** activity may also damage the cells
- Free radicals, ROS, NO damage DNA

# 幽门螺杆菌引起胃溃疡过程示意图

## 感染

螺旋菌感  
染胃腔下半部。



幽门螺杆菌



## 发炎

幽门螺杆菌引起胃黏膜发炎。一般情况下没有任何症状。



# 溃疡

胃部发炎可能导致十二指肠溃疡或胃溃疡。严重的并发症包括出血溃疡和穿孔溃疡。



## 十二指肠溃疡

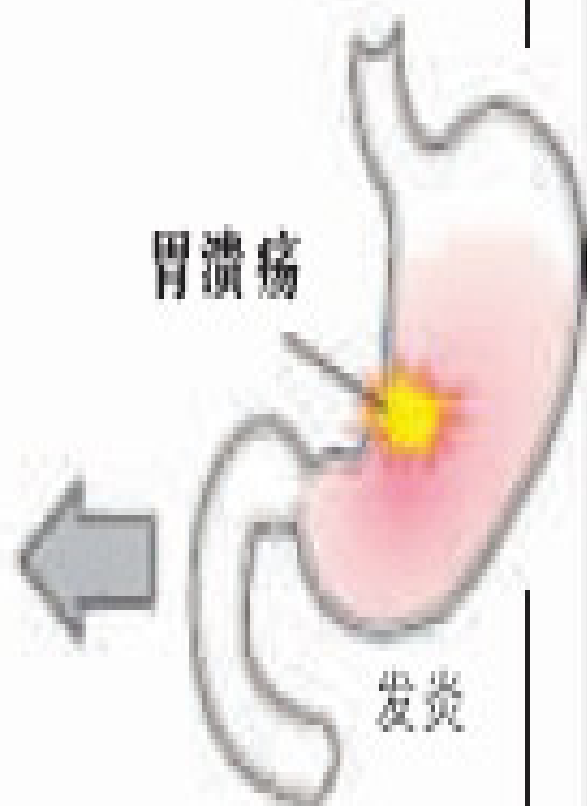
酸性分泌物增加



## 出血溃疡

## 胃溃疡

发炎



# The Nobel Prize in Physiology or Medicine 2005

