

# MICROBIOLOGY

= study of microscopic organisms

**4** main sub-disciplines :  
Virology  
Mycology  
Parasitology  
Bacteriology

**Humans** are hosts to nearly

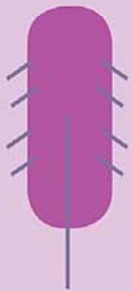
**500** species of bacteria,  
**300** species of parasitic worms and over  
**70** species of protozoa\*

Only 1% of the genes in our body come from our own DNA. That is why lots of researchers are now studying the "microbiome" as important as our genome.

\*Cox F.E.G. 2002. «History of human parasitology». Clinical Microbiology Reviews 15 (4): 595-612.

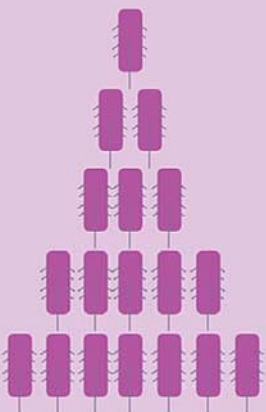



*We carry around 1-2 kg of bacteria in the digestive tract.*



## **5** Reasons **E. coli** is used for **TRANSFORMATION**

- 1) Genetic simplicity – ~4400 genes.
- 2) Growth Rate – doubles every 20 minutes!
- 3) Safety – naturally occurs in the human digestive tract and harmless if handled with care.
- 4) Completely Sequenced Genome – easier analysis.
- 5) Its ability to host foreign DNA.



**1** **PLASMID** in 1 E. coli cell +  24 hours yields =

**4,722,400,000,**  
**000,000,000,000** clones