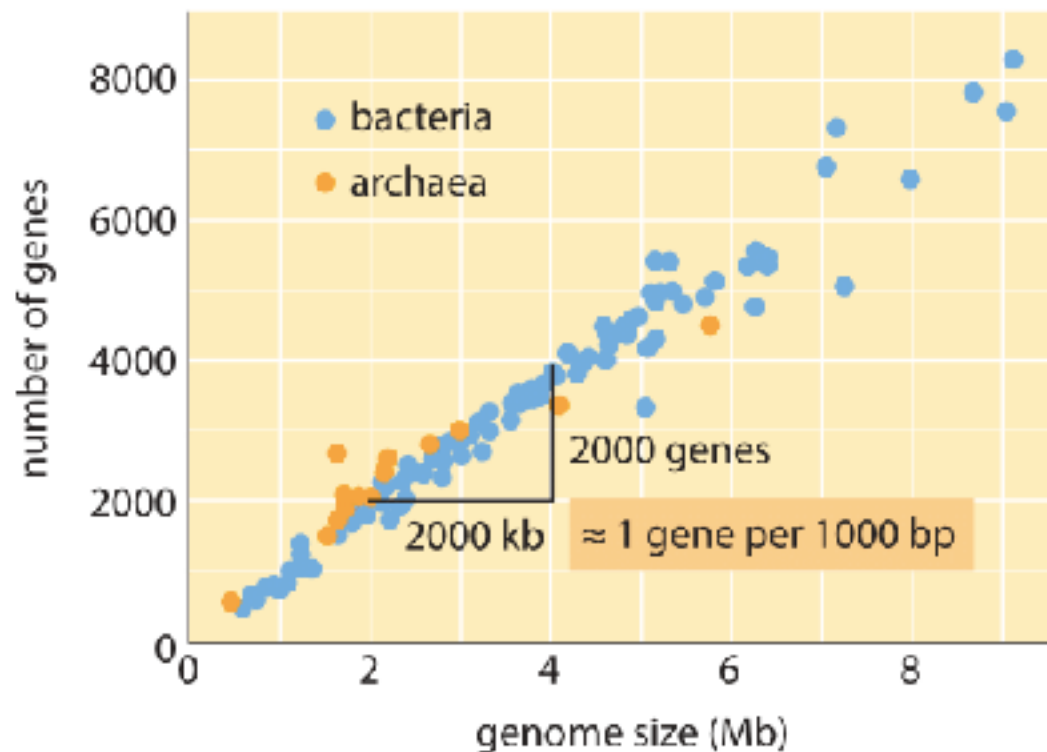


Assumption: protein 300 AA (mean value)

=>

1000 bp /gene

Genome size/1000 => gene number



Mb: 1×10^6 bases

Human genome 3.200.000.000

$3,2 \times 10^9$ bases

<http://book.bionumbers.org/how-many-genes-are-in-a-genome/>

| Organism | # of protein-coding genes | # of genes naive estimate: (genome size / 1000) | BNID |
|--------------------------------|---------------------------|---|----------------|
| HIV 1 | 9 | 10 | 105769 |
| Influenza A virus | 10-11 | 14 | 105767 |
| Bacteriophage λ | 66 | 49 | 105770 |
| Epstein Barr virus | 80 | 170 | 103246 |
| <i>Buchnera sp.</i> | 610 | 640 | 105757 |
| <i>T. maritima</i> | 1,900 | 1,900 | 105766 |
| <i>S. aureus</i> | 2,700 | 2,900 | 105500 |
| <i>V. cholerae</i> | 3,900 | 4,000 | 105760 |
| <i>B. subtilis</i> | 4,400 | 4,200 | 111448 |
| <i>E. coli</i> | 4,300 | 4,600 | 105443 |
| <i>S. cerevisiae</i> | 6,600 | 12,000 | 105444 |
| <i>C. elegans</i> | 20,000 | 100,000 | 101361 |
| <i>A. thaliana</i> | 27,000 | 140,000 | 111360 |
| <i>D. melanogaster</i> | 14,000 | 140,000 | 111379 |
| <i>F. rubripes</i> | 19,000 | 400,000 | 111375 |
| <i>Z. mays</i> | 33,000 | 2,300,000 | 110565 |
| <i>M. musculus</i> | 20,000 | 2,800,000 | 100308 |
| <i>H. sapiens</i> | 21,000 | 3,200,000 | 100399, 111378 |
| <i>T. aestivum</i> (hexaploid) | 95,000 | 16,800,000 | 105448, 102713 |

GENOMICS VS. PROTEOMICS

Genomics and proteomics both peer into living organisms at the subcellular level, but, while genomics reveals cellular blueprints, proteomics captures what's actually happening in cells now.

GENOME:
20,500
estimated human
genes

PROTEOME:
6,000,000
estimated proteoforms
per cell type

NAUTILUS
BIOTECHNOLOGY

<https://www.nautilus.bio/blog/genomics-vs-proteomics-two-complementary-perspectives-on-life/>

