

# MODEL ORGANISMS -

# NEPWI DEK SBSPHG

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## Mus musculus

### Key organism for studying:

- Human disease
- Mutation
- Development
- Coat color
- Immunology

### Genetic "Vital Statistics"

Genome size:	2600 Mb
Chromosomes:	19 autosomes, X and Y ( $2n = 40$ )
Number of genes:	30,000
Percentage with human homologs:	99%
Average gene size:	40 kb, 8.3 exons/gene
Transposons:	Source of 38% of genome
Genome sequenced in:	2002



## Drosophila melanogaster

### Key organism for studying:

- Transmission genetics
- Cytogenetics
- Development
- Population genetics
- Evolution

### Genetic "Vital Statistics"

Genome size:	180 Mb
Chromosomes:	Diploid, 3 autosomes, X and Y ( $2n = 8$ )
Number of genes:	13,000
Percentage with human homologs:	~50%
Average gene size:	3 kb, 4 exons/gene
Transposons:	P elements, among others
Genome sequenced in:	2000



## Caenorhabditis elegans

### Key organism for studying:

- Development
- Behavior
- Nerves and muscles
- Aging

### Genetic "Vital Statistics"

Genome size:	97 Mb
Chromosomes:	5 autosomes ( $2n = 10$ ), X chromosome
Number of genes:	19,000
Percentage with human homologs:	25%
Average gene size:	5 kb, 5 exons/gene
Transposons:	Several types, active in some strains
Genome sequenced in:	1998



## Arabidopsis thaliana

### Key organism for studying:

- Development
- Gene expression and regulation
- Plant genomics

### Genetic "Vital Statistics"

Genome size:	125 Mb
Chromosomes:	diploid, 5 autosomes ( $2n = 25,000$ )
Number of genes:	25,000
Percentage with human homologs:	18%
Average gene size:	2 kb, 4 introns/gene
Transposons:	10% of the genome
Genome sequenced in:	2000