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Saccharomyces cerevisiae

Key organism for studying:

- Genomics
- Systems biology
- Genetic control of cell cycle
- Signal transduction
- Recombination
- Mating type
- Mitochondrial inheritance
- Gene interaction; two-hybrid

Genetic "Vital Statistics"

Genome size:	12 Mb
Chromosomes:	$n = 16$
Number of genes:	6000
Percentage with human homologs:	25%
Average gene size:	1.5 kb, 0.03 intron/gene
Transposons:	Small proportion of DNA
Genome sequenced in:	1996

Escherichia coli

Key organism for studying:

- Transcription, translation, replication, recombination
- Mutation
- Gene regulation
- Recombinant DNA technology

Genetic "Vital Statistics"

Genome size:	4.6 Mb
Chromosomes:	1, circular
Number of genes:	4000
Percentage with human homologs:	8%
Average gene size:	1 kb, no introns
Transposons:	Strain specific, ~60 copies per genome
Genome sequenced in:	1997

Neurospora crassa

Key organism for studying:

- Genetics of metabolism and uptake
- Genetics of crossing over and meiosis
- Fungal cytogenetics
- Polar growth
- Circadian rhythms
- Interactions between nucleus and mitochondria

Genetic "Vital Statistics"

Genome size:	43 Mb
Chromosomes:	7 autosomes ($n = 7$)
Number of genes:	10,000
Percentage with human homologs:	6%
Average gene size:	1.7 kb, 1.7 introns/gene
Transposons:	rare
Genome sequenced in:	2003