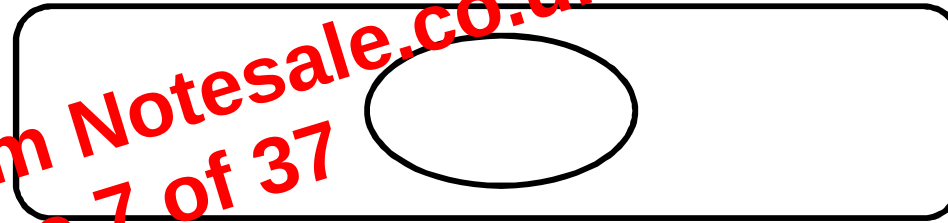


Preview from Notesale.co.uk
Page 1 of 37

Introductory Genomics

Bacterial Genomics - a simple circle?

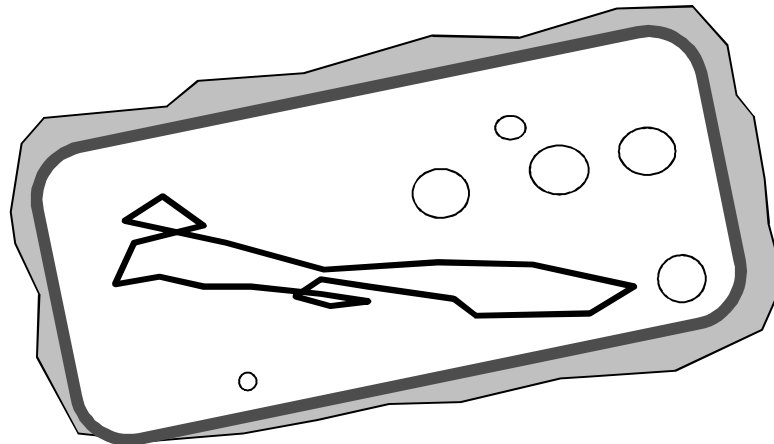
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Page 7 of 37

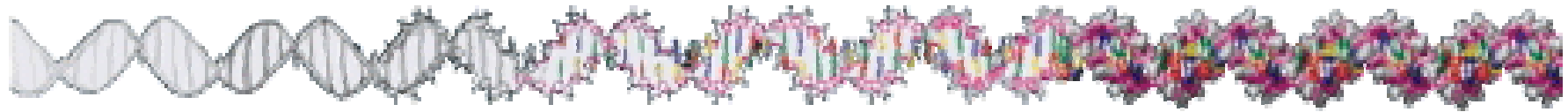


E. coli

- *Bacillus thuringiensis*

- one c/s 5.7 Mb
- 6 plasmids each >50 kb totaling 1.2 Mb





A short history of the HGP

1953 W&C DNA structure

1972 Paul Berg first recombinant molecule

1977 M&G and Sanger DNA sequencing

1985 Kary Mullis PCR

1986 1st public meeting of project, later money

Leroy Hood & Lloyd Smith automated sequencer

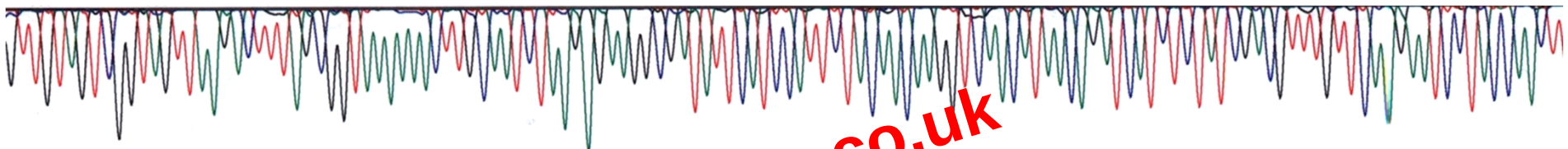
1987 WUMS YACs

Helen Donis-Keller 1st map

Du Pont fluorescent dyes

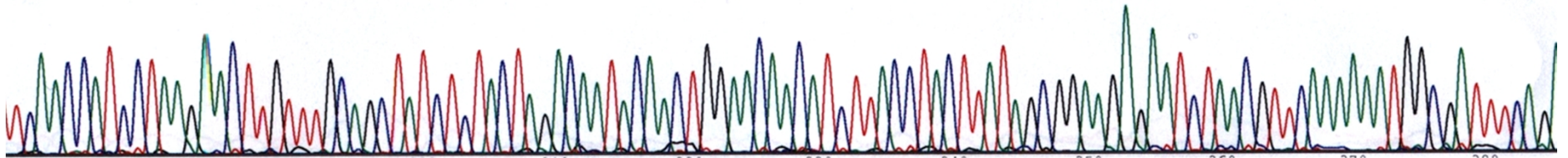
1988 BIG money

Trials on smaller genomes



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Page 19 of 37

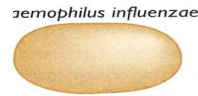
Brief description of how genomes are studied





Shotgun-sequencing

TIGR
THE INSTITUTE FOR GENOMIC RESEARCH



Bacterial cell

Extract DNA

Sonicate

DNA fragments of various sizes

Agarose gel electrophoresis

Purify DNA from gel

DNA fragments 1.6-2.0 kb

Prepare a clone library

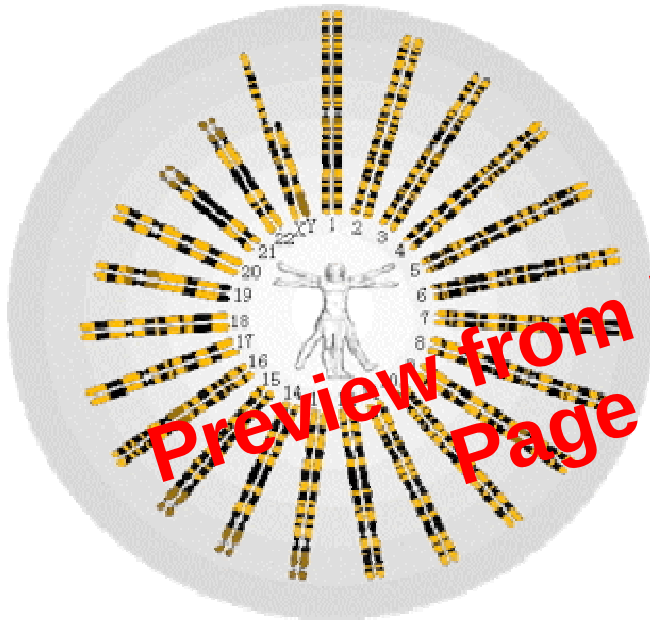
Sequence ends of inserts

End-sequences

Assemble sequence into contigs

LANE 1: Sonicated *H. influenzae* DNA
LANE 2: DNA markers

Figure 6.10 The way in which the shotgun approach was used to obtain the DNA sequence of the *Haemophilus influenzae* genome.



- Average gene is 3000 bp
- Biggest gene 2.4 million bp
- 2-3% encode genes
- Approx 97% non-coding
- 98% identical to chimp!

