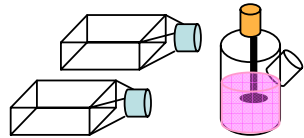


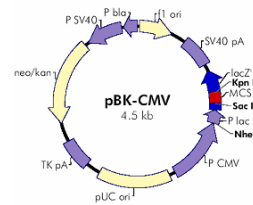
cDNA Libraries for EST Sequencing

Workflow for cDNA Library Construction, EST Sequencing, and Microarray

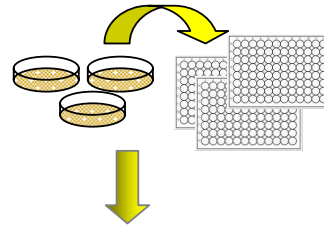
Isolate mRNA from CHO Cells or Chinese Hamster Tissues



Construct cDNA Libraries



Isolate *E. coli* colonies containing CHO cDNAs



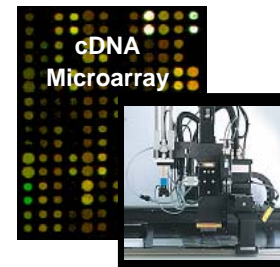
High-Throughput EST Sequencing



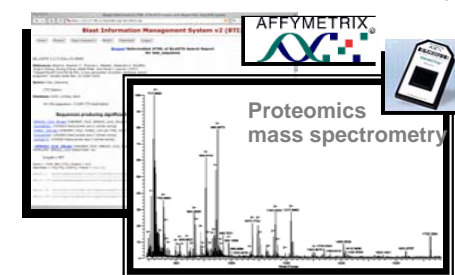
Applications of cDNA Libraries and EST Sequencing

- A quick and affordable alternative to whole genome sequencing
- Captures the expressed fraction of the genome (mRNA)
- Cloned cDNAs can be used as probes (printing DNA microarrays)
- Sufficient sequence information for many informatics-based research tools (including oligo based microarrays)

Print cDNA Microarrays



Resources for Gene Expression Analysis



Current Status of cDNA Libraries and EST Sequencing

Total of Five cDNA Libraries

- Three CHO Cell Line Libraries
 - Four CHO cell lines
 - Parental (DXB11 and DG44) and recombinant cell lines
 - Varied culture conditions and treatments
- Two Chinese hamster tissue libraries
 - Chinese hamster brain
 - Chinese hamster Spleen

Sequence Description	Cell Line Libraries	Spleen Library	Brain Library	Total
Total High Quality ESTs (>100bp)	26,662	13,615	10,480	50,757
Mitochondrial Genome Transcripts	2,496	1,025	846	4,367
Nuclear Genome Transcripts	24,166	12,590	9,634	46,390
Sequences in Final Assembly (Excluding Chimeric Sequences and Mitochondrial Genome Sequences)	22,735	11,688	9,256	43,679
Number of Singlets				8,663
Number of Contigs				7,473
**Unique Sequences **				16,136
Overall Redundancy				63.1%