

Biotechnology and Genetic Engineering-PBIO 450/550

Gene libraries

cDNA libraries

Library screening

Eukaryotic gene organization

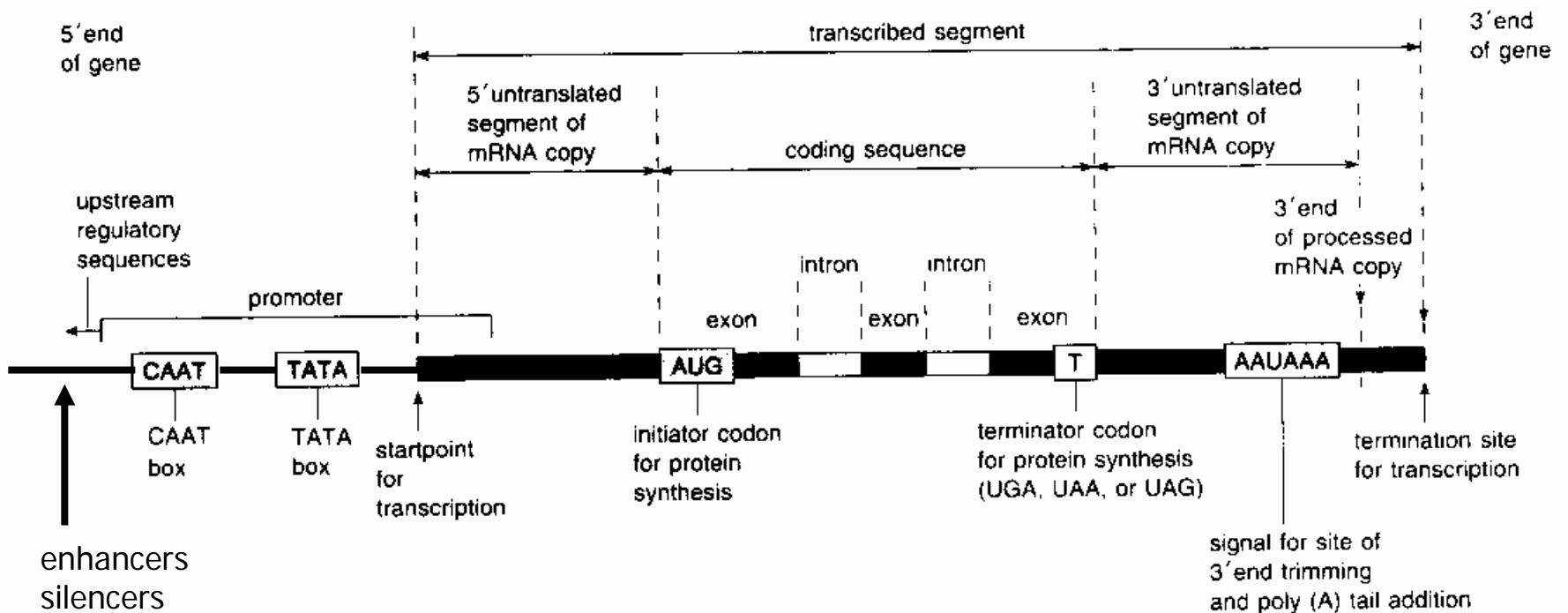


Fig. 4.12 Genomic library construction

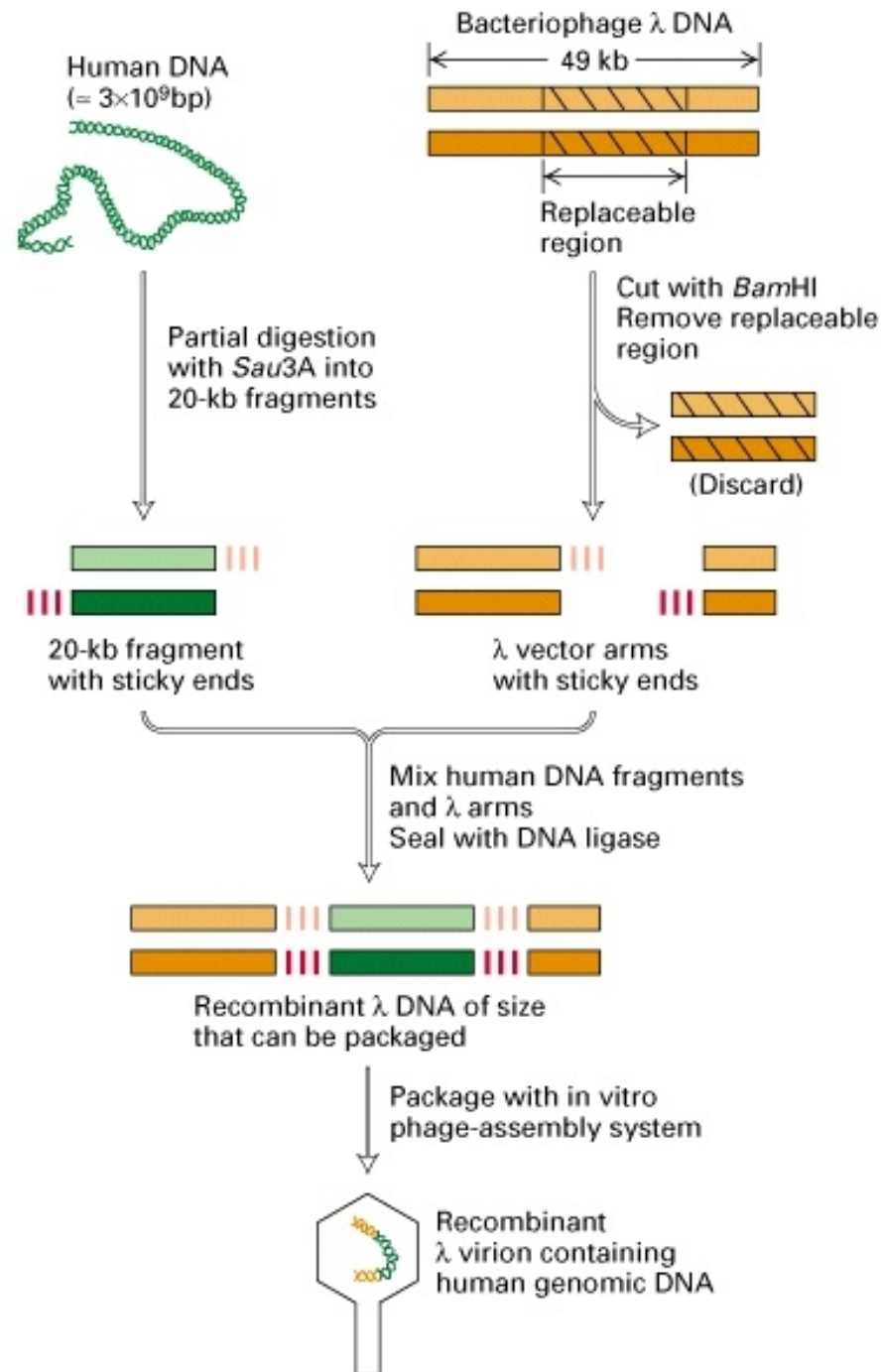


Fig. 4.14
Screening a
genomic library
using DNA
hybridization to
a (radio-)labeled
DNA probe

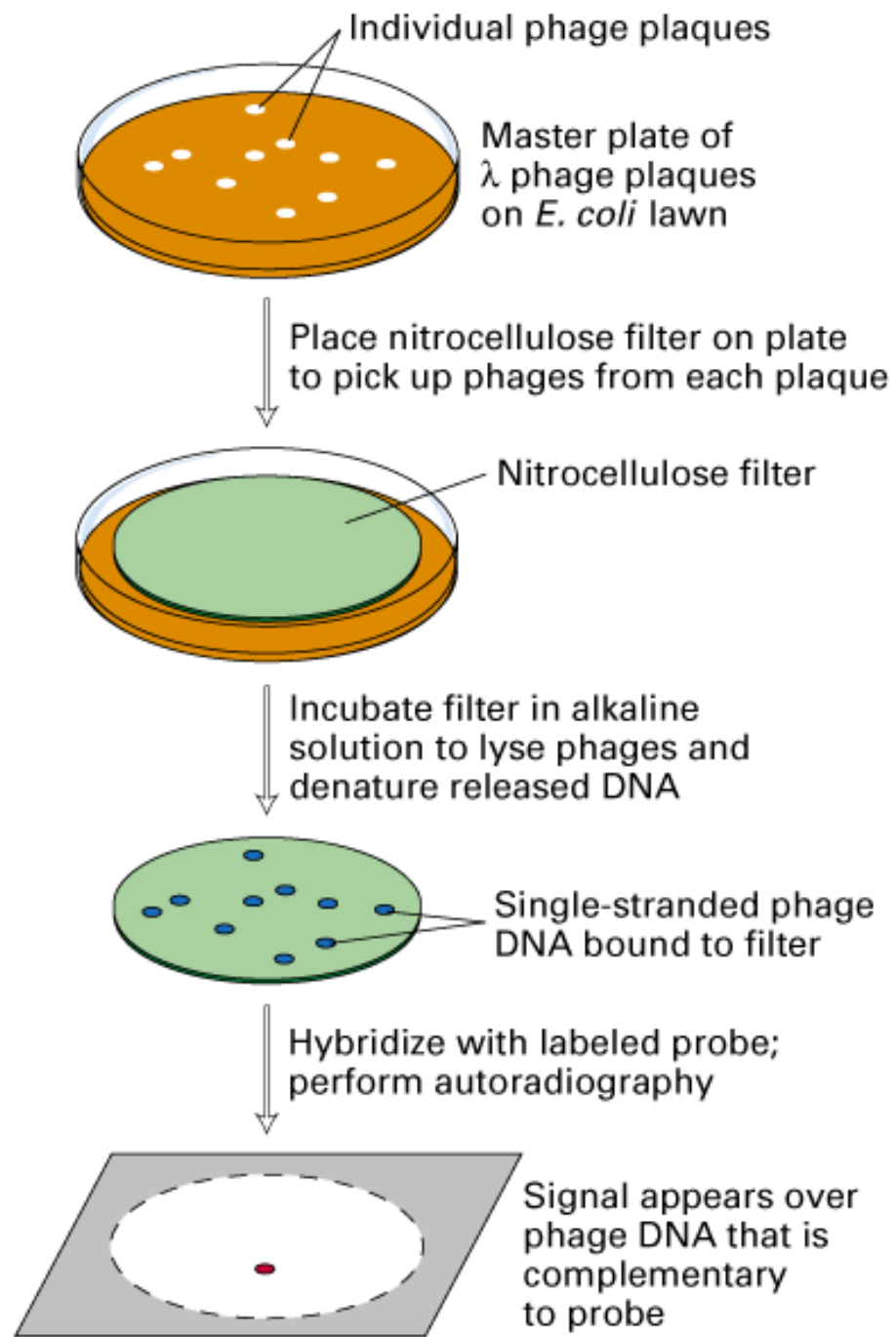


Fig. 4.15 Production of a (radio-)labeled DNA probe by the random primer method [uses the Klenow fragment of DNA polymerase]

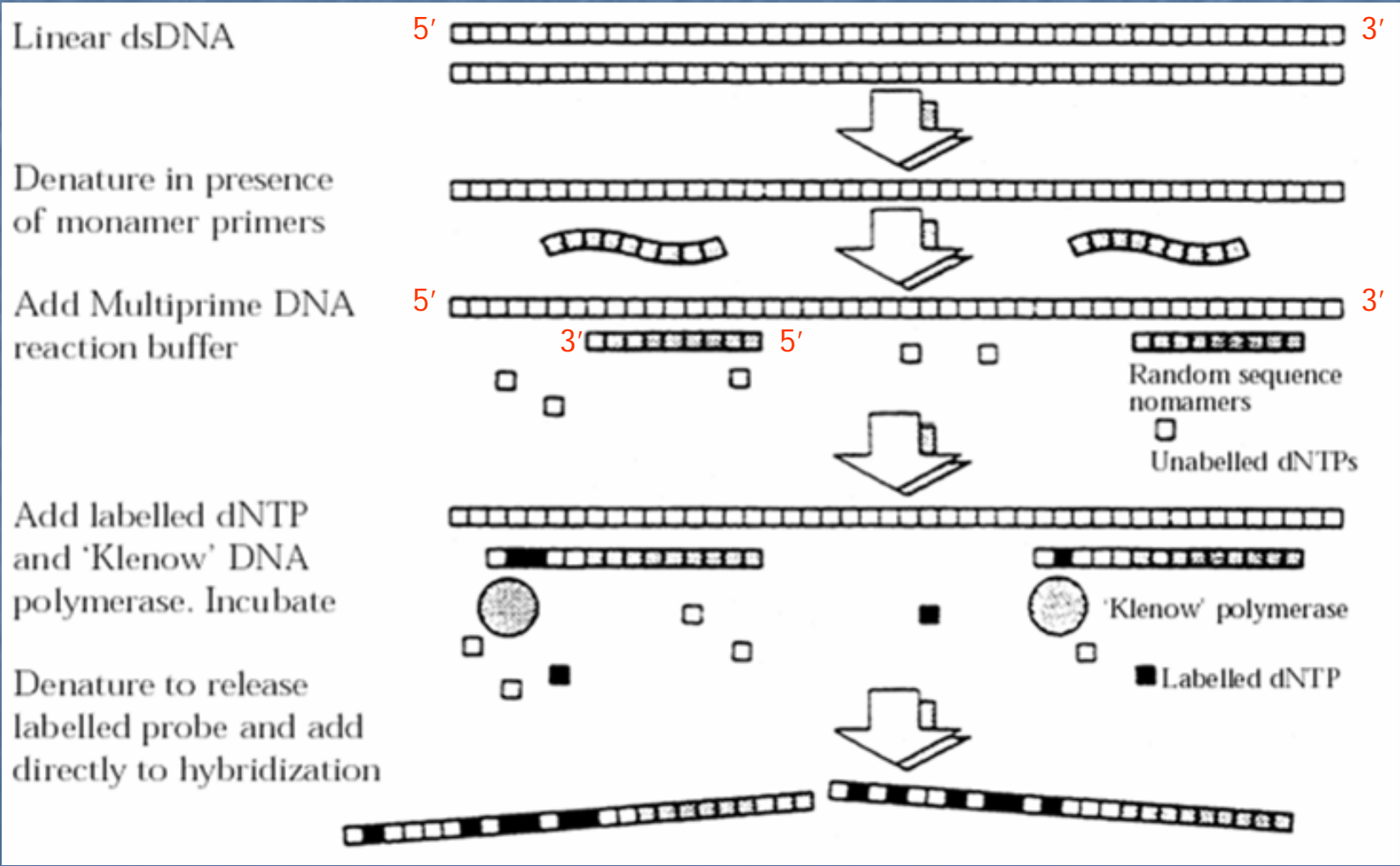


Fig. 4.20 Purification of polyadenylated mRNA using oligo(dT)-cellulose separation

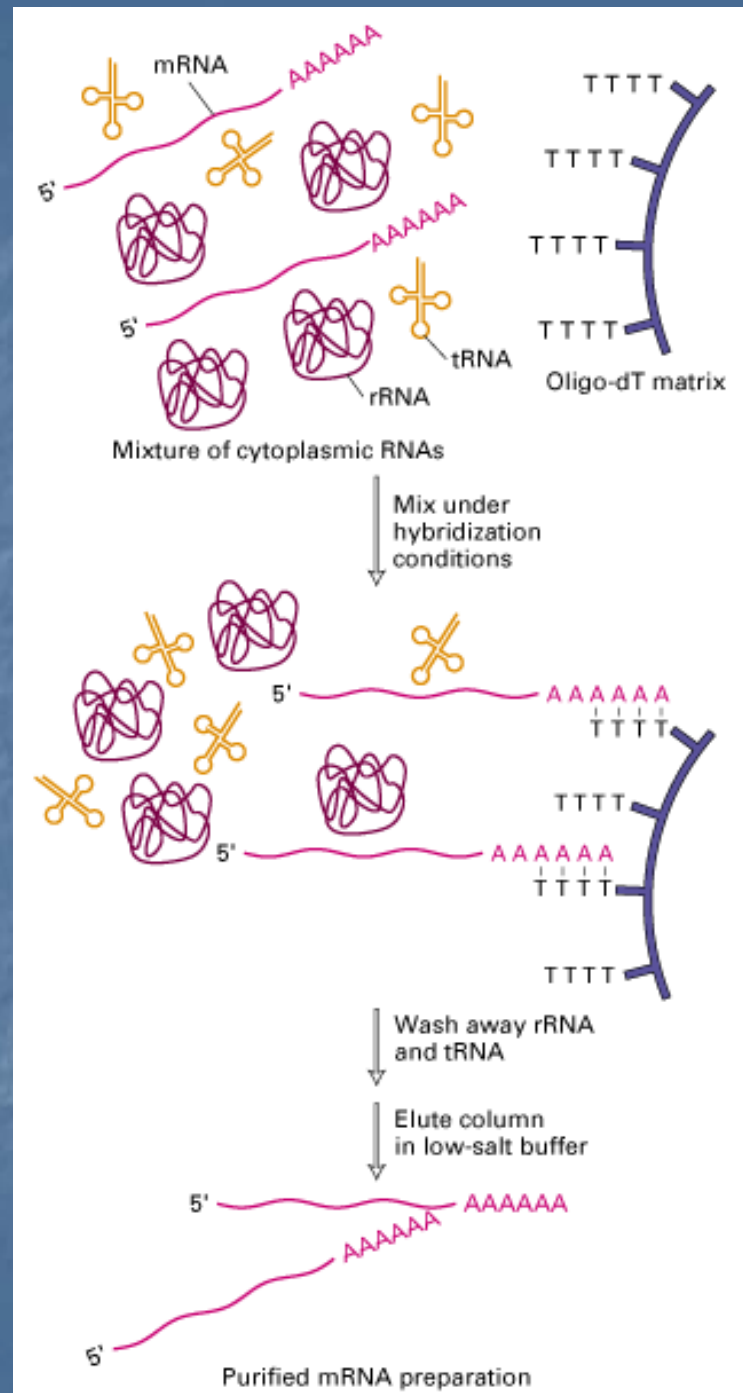


Fig. 4.21/4.22 Complementary DNA or cDNA cloning; cDNA library construction

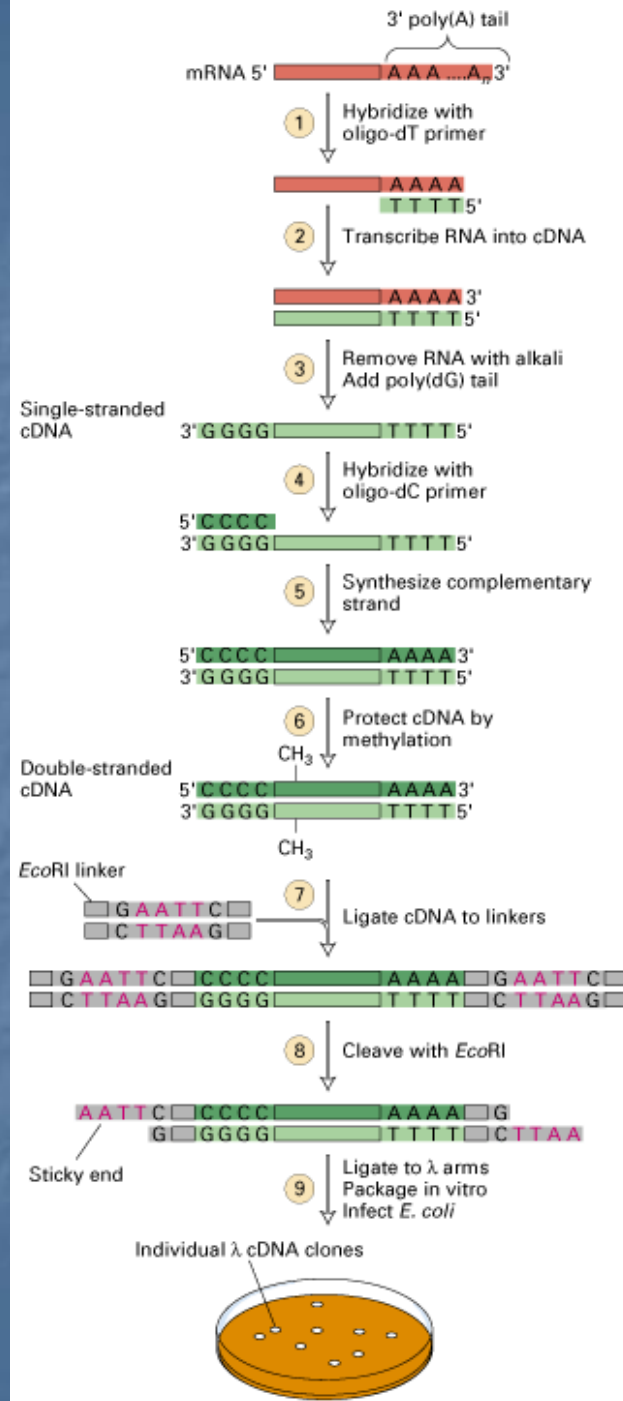


Fig. 4.24/4.25 Bacteriophage λ cloning system

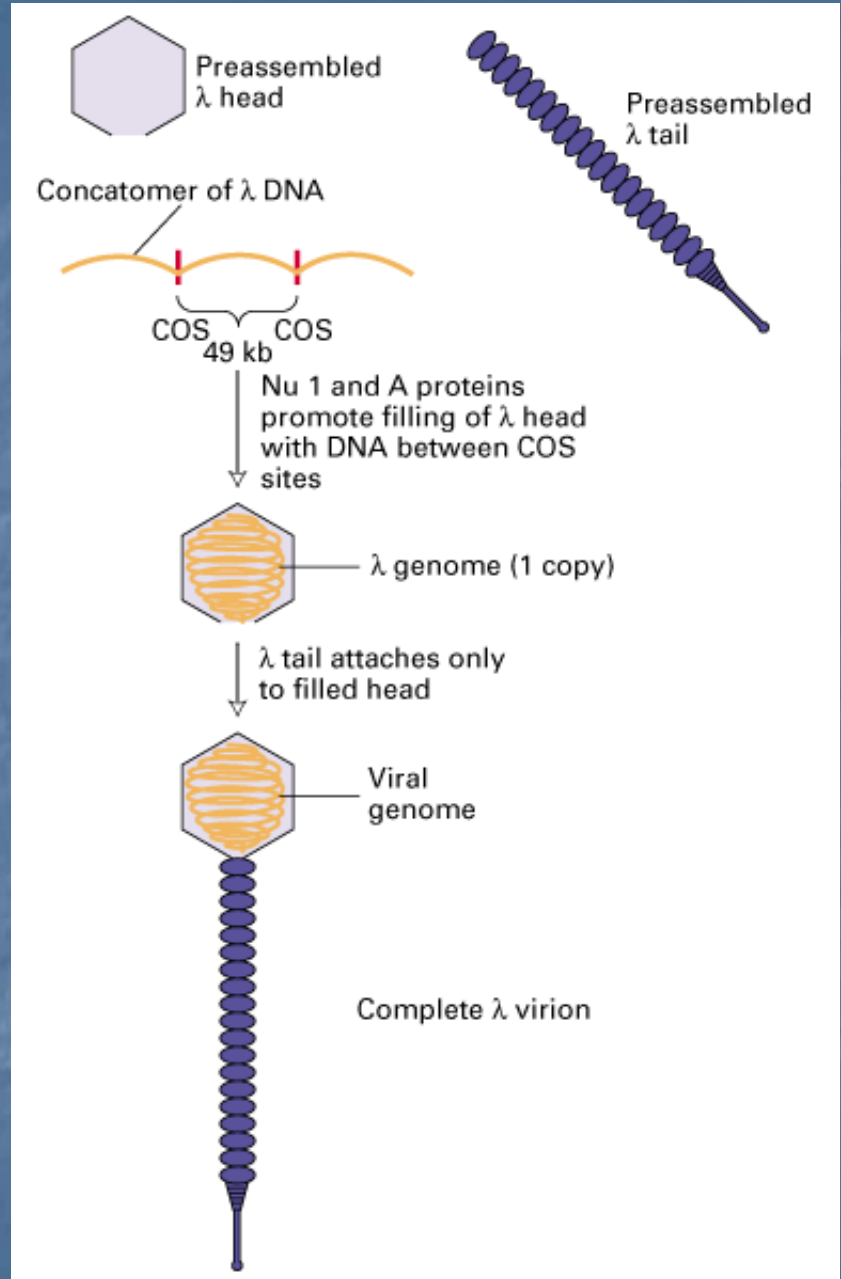
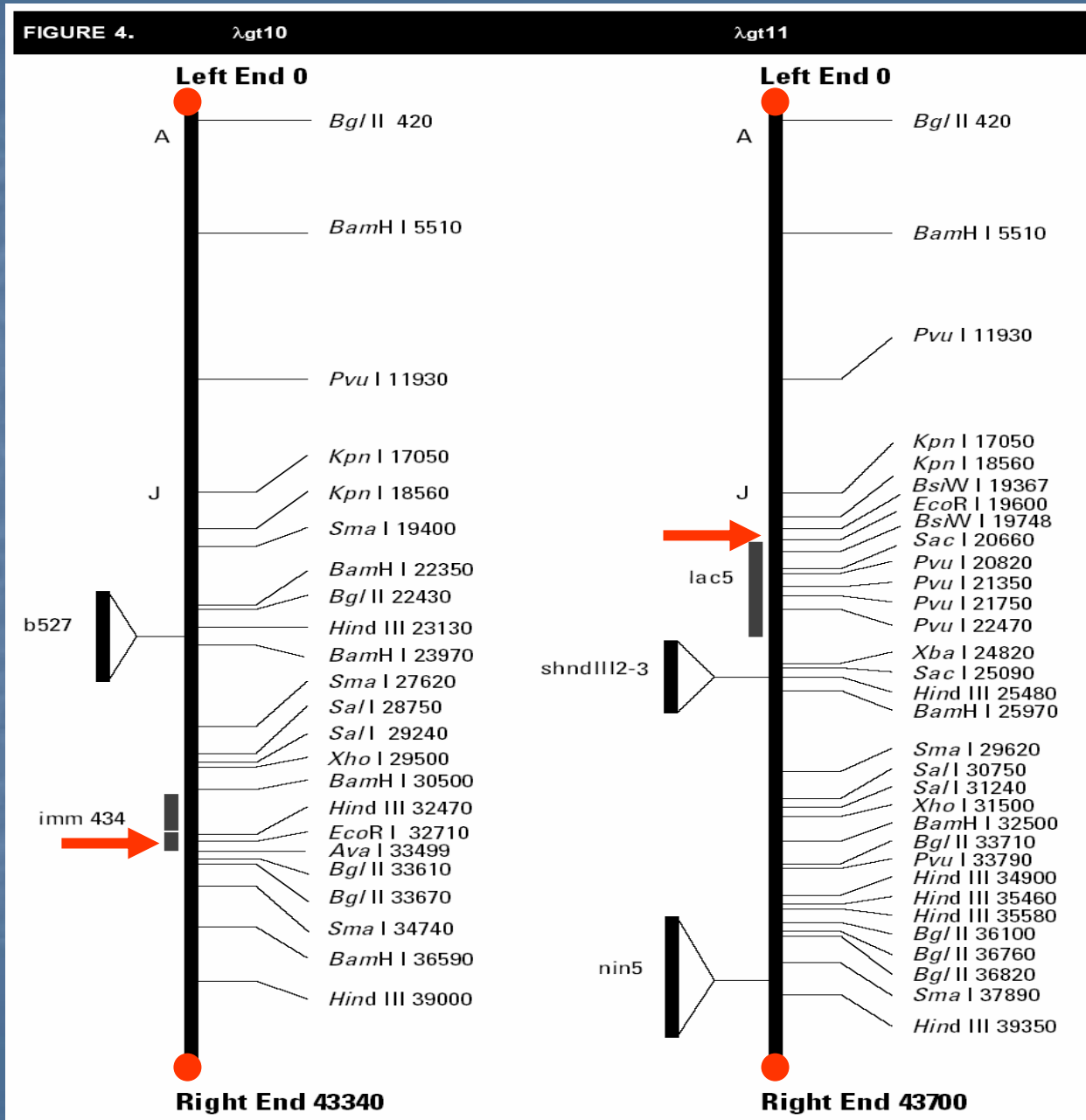


Fig. 4.24 Bacteriophage λ cloning system



Cos sites
at the left
and right
ends

Cloning
site



Fig. 4.14
Screening a
cDNA library
using DNA
hybridization to
a (radio-)labeled
DNA probe

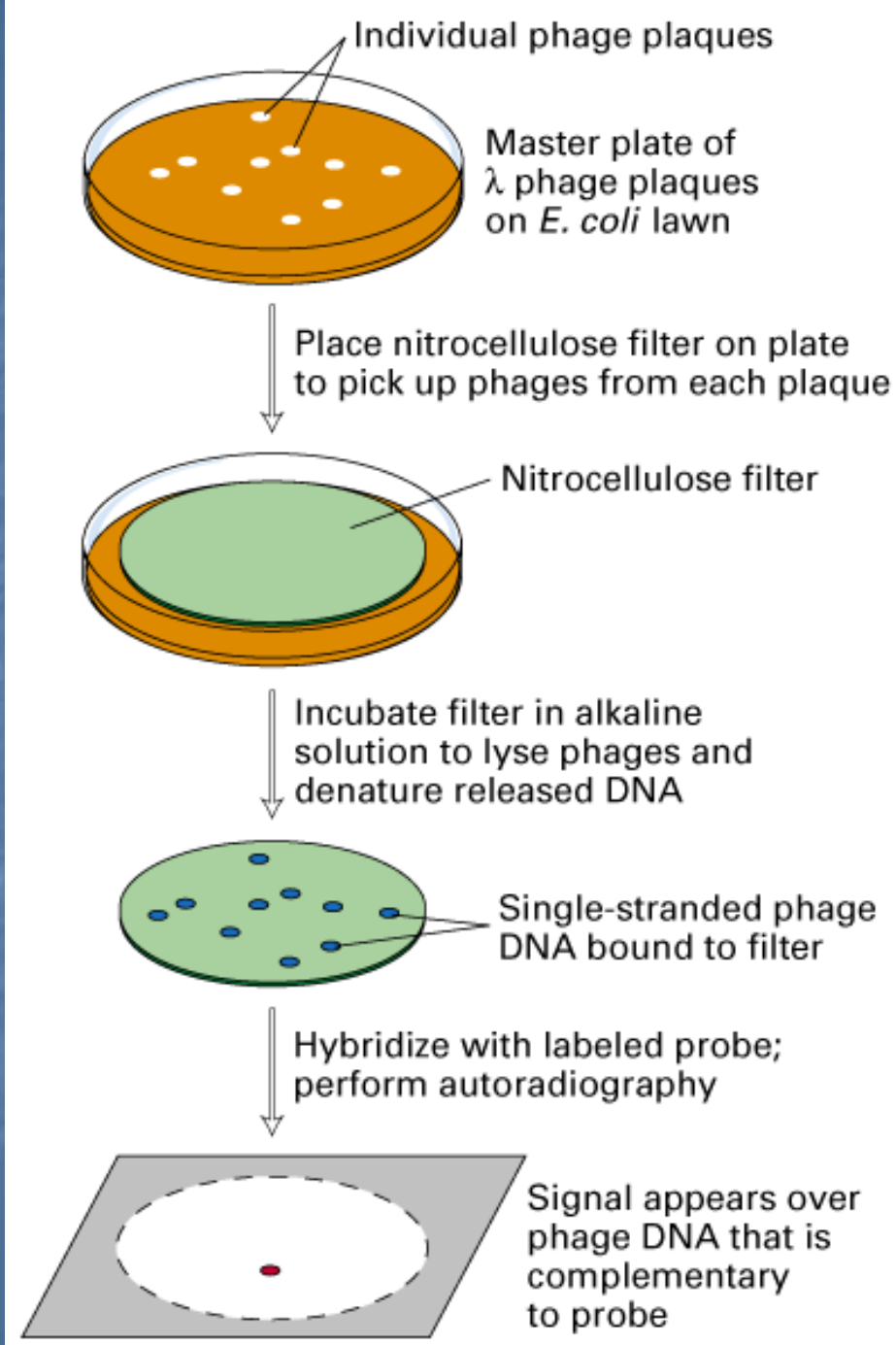


Fig. 4.14 Screening a cDNA library with a labeled oligonucleotide probe based on a known peptide sequence

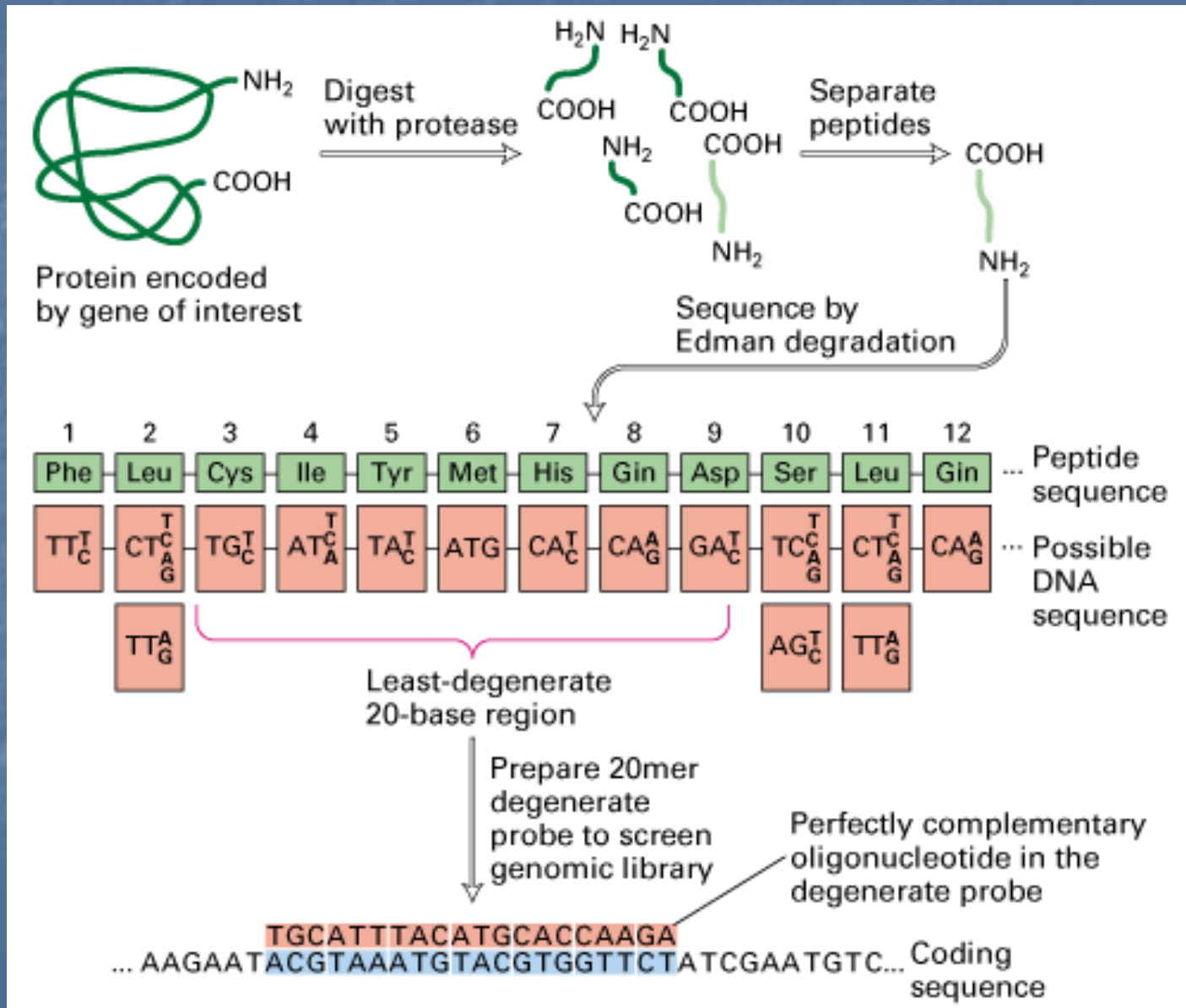


Fig. 4.15 Using polynucleotide kinase and γ - ^{32}P -labeled ATP to radiolabel oligonucleotide probes

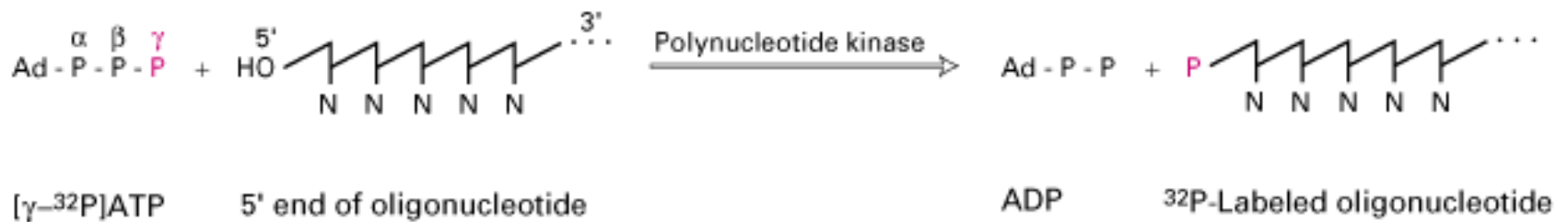


Fig. 4.18 Immunological screening of an **expression** cDNA library with a primary antibody and labeled secondary antibody; note the label is often an enzyme label like alkaline phosphatase or horseradish peroxidase, but it can also be ^{125}I

