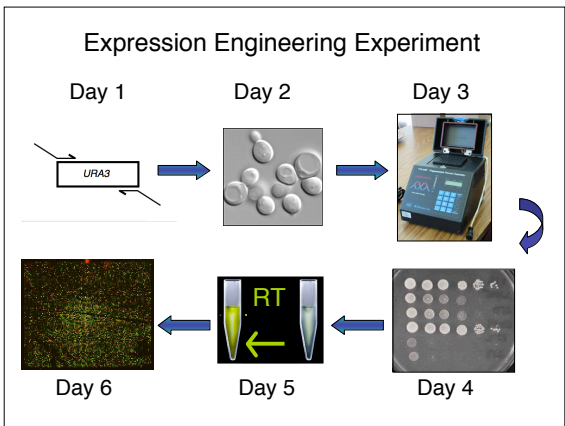


20.109: Expression Engineering

Spring 2007
Lecture 1
April 3rd, 2007



Expression Engineering Experiment	
Lecture 1 • eukaryotic gene expression	Lecture 2 • intro to yeast genetics • yeast SAGA complex
Lecture 3 • IMRD (Harlan Breindel)	Lecture 4 • yeast genetics
Lecture 5 • measuring gene expression	Lecture 6 • microarray analysis (Rebecca Fry)

Parts-level description of chromatin

DNA

Nucleosomes

composed of?

component's names?

covalent modifications?

<http://www.ncbi.nlm.nih.gov/Structure/mmdb/mmdbsrv.cgi?form=6&db=t&Dopt=s&uid=17269>

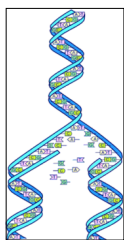
S. cerevisiae histones

<u>Protein</u>	<u>Gene</u>
H2A	HTA2/HTA1 (H istone T wo A)
H2B	HTB2/HTB1 (H istone T wo B)
H3	HHT1/HHT2 (H istone H Three)
H4	HHF1/HHF2 (H istone H Four)

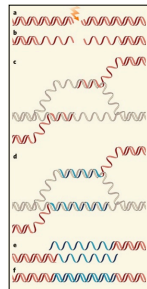
<http://www.yeastgenome.org/>



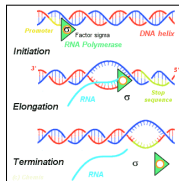
Chromatin: obstacle to all DNA-templated processes



www.answers.com

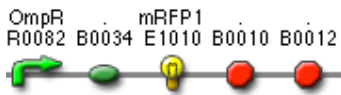


Nature (2006) 443: 517



www.geneticengineering.org

Transcription: prokaryotic vs. eukaryotic

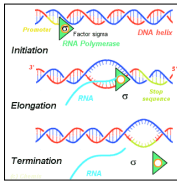


Part:BBa_M30011

<http://parts.mit.edu>

Transcription: prokaryotic vs. eukaryotic

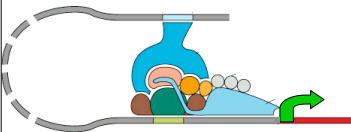
Initiation = formation of ternary complex (RNAP+DNA+first RNA nucleotides)



Elongation = processive polymerization of RNA chain

Termination = dissolution of ternary complex

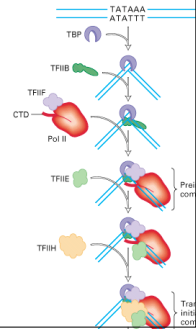
Transcription: prokaryotic vs. eukaryotic



Mol Biol of the Cell, Garland Publishing, 1990

Transcription: prokaryotic vs. eukaryotic

Initiation = formation of ternary complex (RNAP+DNA+first RNA nucleotides)



Transcription: prokaryotic vs. eukaryotic

Elongation = processive polymerization of RNA chain

Termination = dissolution of ternary complex



Summary

Are you taller than your cell's DNA?



Chromatin: obstacle to DNA-templated rxns

