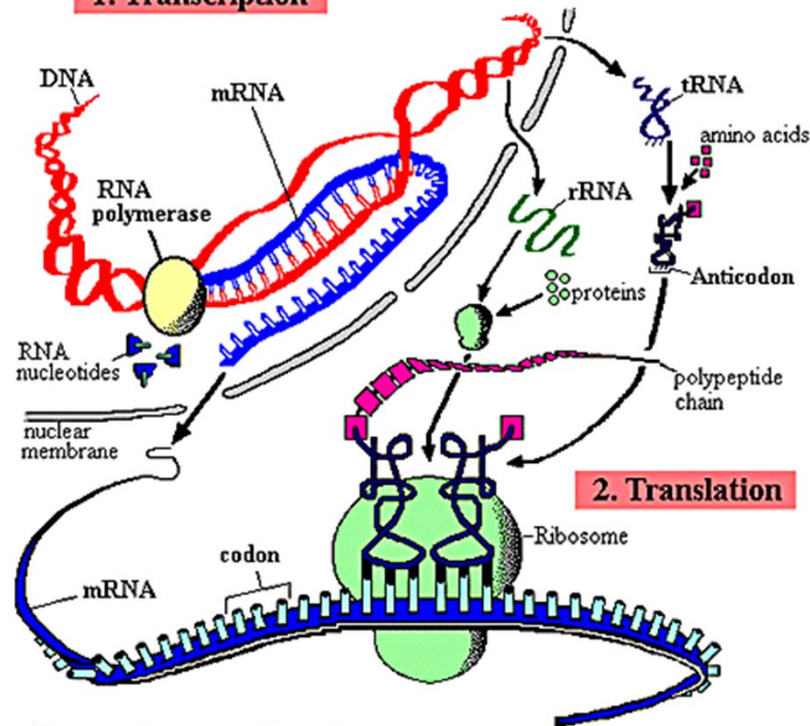


Crosslinking of archaeal transcription initiation

Christina Bone

Transcription

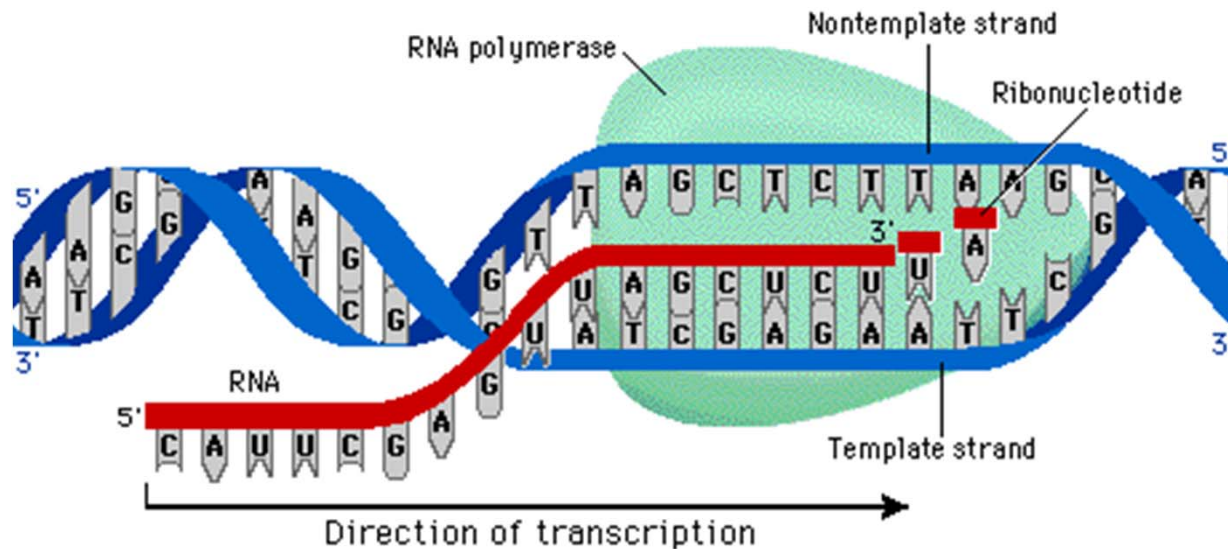
1. Transcription



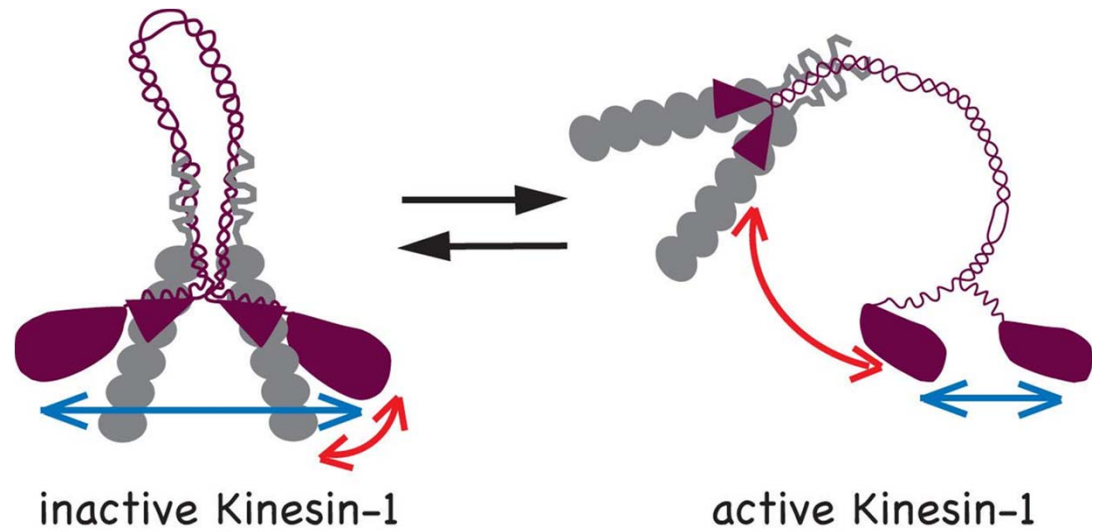
Protein synthesis

Transcription:

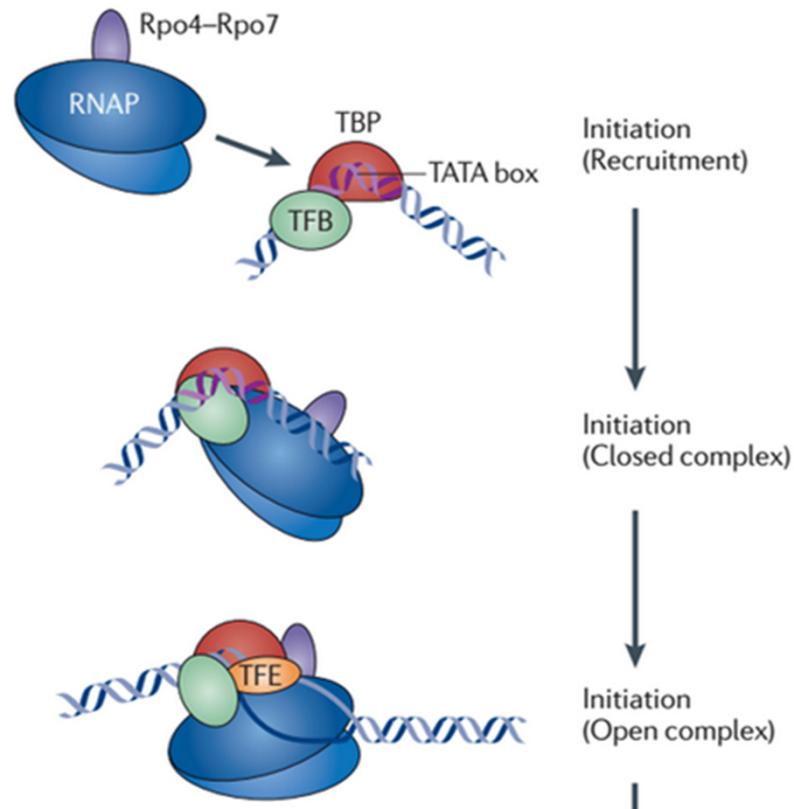
The process of synthesizing RNA with DNA acting as a template



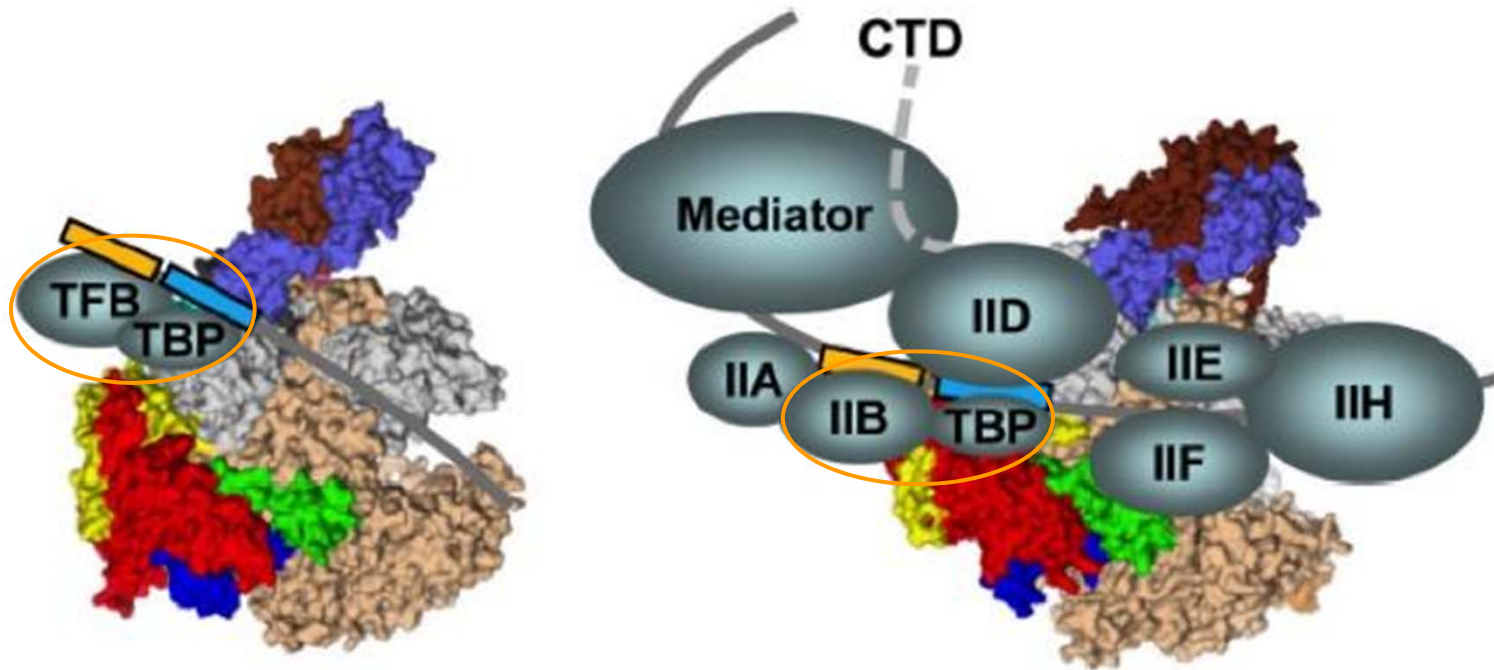
Structure=function



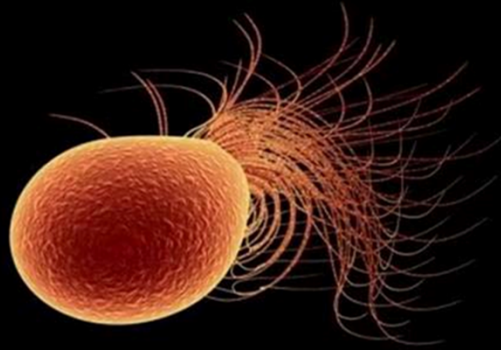
Pre-initiation Complex (PIC)



Three domains of life



Pyrococcus furiosus



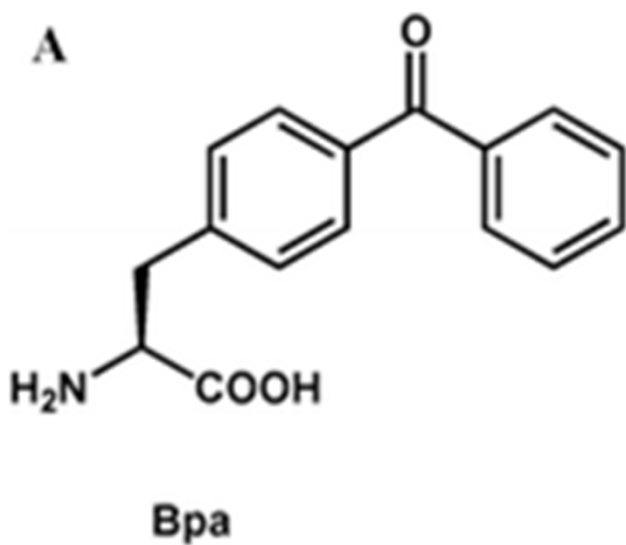
Bioengineering

Hydrogen production!
Fuel

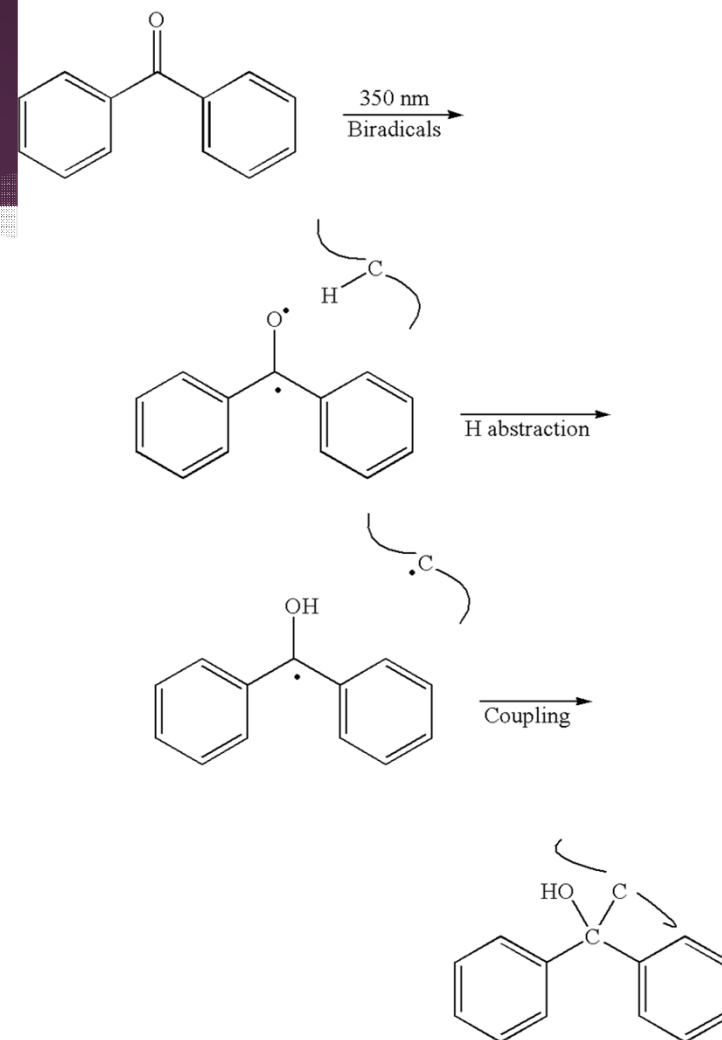


Photo-crosslinking

Benzophenone



Schematic 1. Mechanism of tethering benzophenone to a substrate



The experiment

Into a tube: Tata-binding protein (TBP),
mutant TFBI, RNAP, DNA (-95 +85)

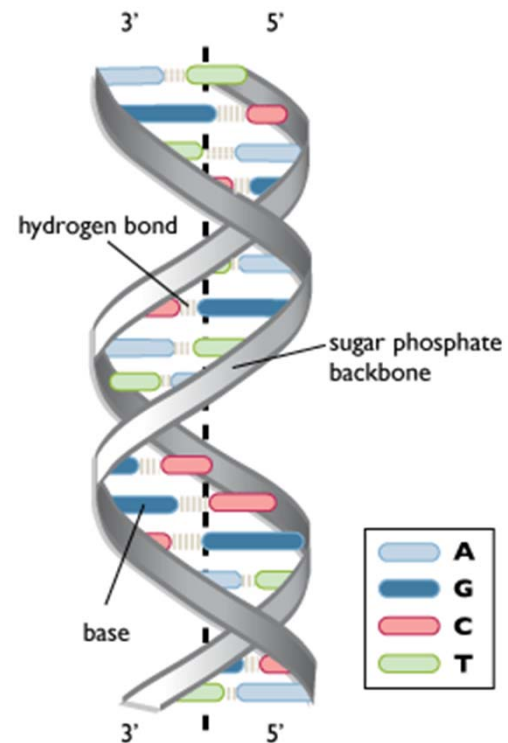
UV exposure on a heat block



The experiment (cont.)

Talon beads

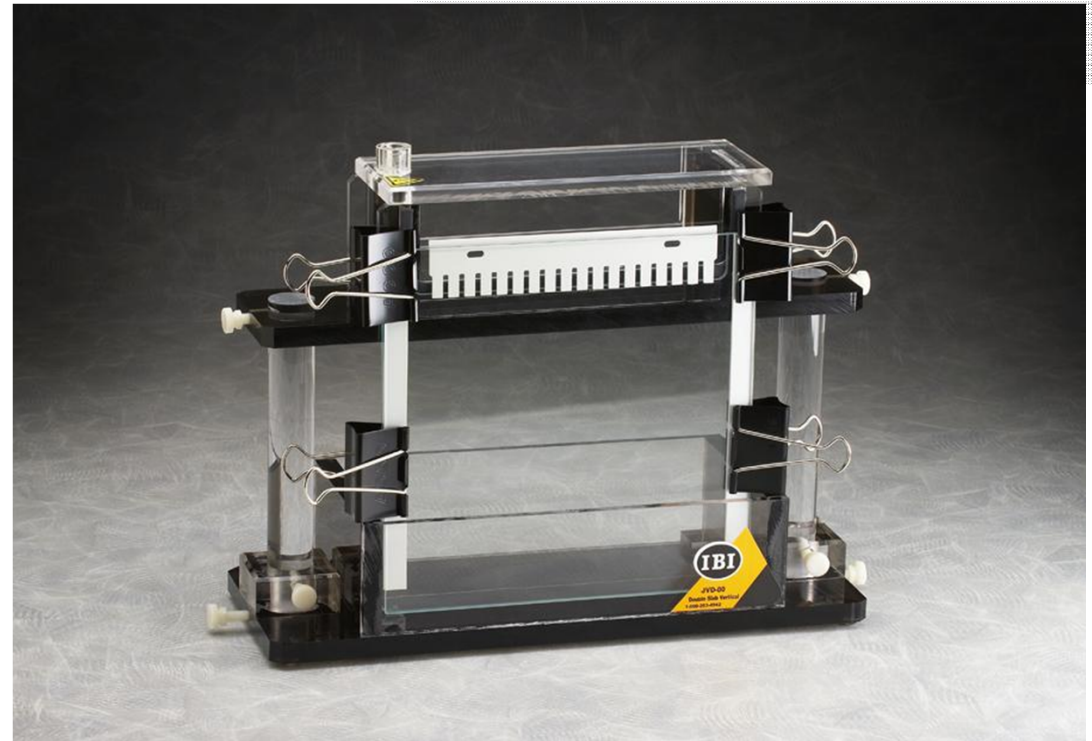
PCR primer extension



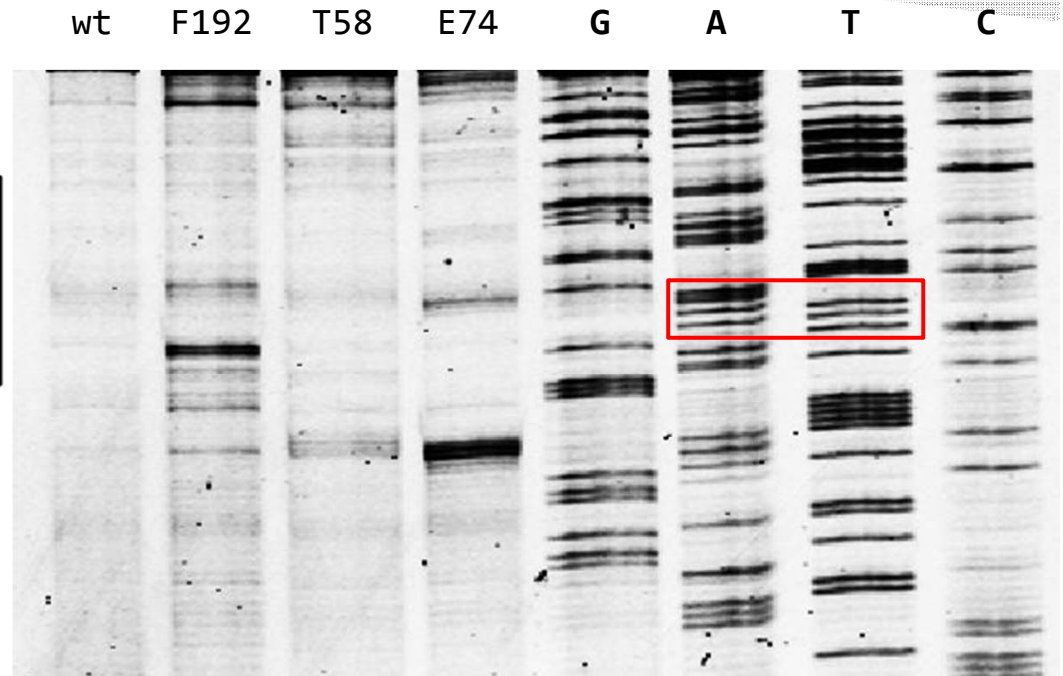
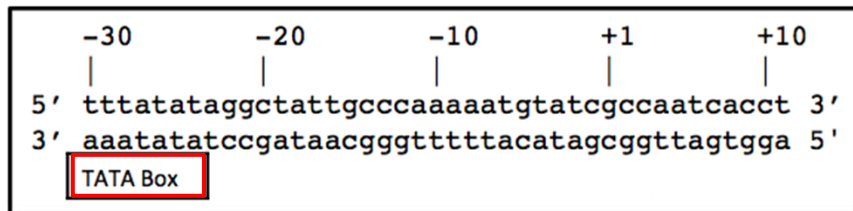
The experiment (cont.)

Gel electrophoresis

Results



Results- NT strand without TFE



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Vlad Geshka and Hannah Tierney

NSF

REU Coordinator: Ellie Bradley



Picture credits

<http://4.bp.blogspot.com/-CH23wOsZf9I/VEaV->

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http://www.phschool.com/science/biology_place/biocoach/images/transcription/startrans.gif

http://www-personal.umich.edu/~kjverhey/images/Fig2_KHCconformchanges.jpg

<http://www.qualitylogoproducts.com/tradeshaw-promotions/go-anywhere-fold-up-loungechair-extralarge-57166.jpg>

<http://pubs.rsc.org/services/images/RSCpubs.ePlatform.Service.FreeContent.ImageService.svc/ImageService/Articleimage/2009/MB/b904032c/b904032c-f1.gif>

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http://web.mst.edu/~microbio/BIO221_2010/images/Pyrococcus-1.jpg

http://www.journalofecology.org/SpringboardWebApp/userfiles/jec/image/edchoice986/edchoice986%20vent%20no%20caption_line.png

http://www.nature.com/polopoly_fs/7.9709.1364400313!/image/1.12686_B2440045-Pyrococcus_furiosus_archaea_SEM-SPL.jpg_gen/derivatives/landscape_300/1.12686_B2440045-Pyrococcus_furiosus_archaea_SEM-SPL.jpg

<http://cdn.zmescience.com/wp-content/uploads/2013/04/hydrogen-fuel.jpg>

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http://cyberbridge.mcb.harvard.edu/images/dna1_7.png

<https://encrypted-tbn3.gstatic.com/images?q=tbn:ANd9GcRZvyd90w0OzOulDx5HBtxuc77VBXI-wV2FGFyB9merG63UFfZu>

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Questions?