

## POGIL - Gene Expression: Transcription

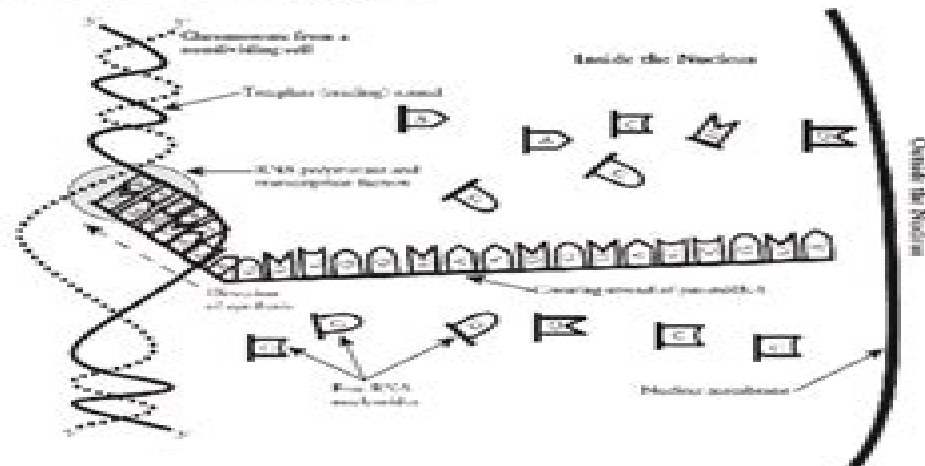
*How is mRNA synthesized and what message does it carry?*

### Why?

Deoxyribonucleic DNA is often referred to as a genetic blueprint. In the same way that blueprints contain the instructions for construction of a building, the DNA found inside the nuclei of cells contains the instructions for assembling a living organism. The DNA blueprint carries its instructions in the form of genes. In most cases the genes direct the production of a polypeptide, from which other more complex proteins, such as enzymes or hormones, may be constructed. These polypeptides and other molecules run the organism's metabolism and, in multicellular

organisms, dictate what each cell's job is. So, what is the language of these instructions and how are they read and decoded by the cellular organelles? This activity will focus on the decoding of genes in eukaryotes.

### Model 1 - Transcription



#### 1. Consider the eukaryotic cell in Model 1.

a. Where in the cell is the DNA found?

b. Where in the cell does transcription take place?

#### 2. Refer to Model 1.

a. What polymer is synthesized during transcription?

b. What monomers are used to construct this polymer and where are they found?

3. According to Model 1, what enzyme is required for transcription? (*Hint: Think about how enzymes are named. What ending is used for enzyme names?*)

#### 4. Refer to Model 1.

a. What is the base-pair rule for a DNA strand matching an RNA strand?

b. Compare this base-pair rule with that of two DNA strands.

#### 5. Which strand of the DNA contains the "blueprint" for the pre-mRNA?

#### 6. Consider Model 1.

a. In which direction is the DNA molecule read? \_\_\_\_\_

b. The DNA strand and pre-mRNA strand are anti-parallel. With this in mind label the 3' and 5' ends of the pre-mRNA strand in Model 1.

c. In which direction is the pre-mRNA molecule constructed? \_\_\_\_\_

7. Before printing presses were available, books had to be transcribed in order to share the information

# 13 4 Gene Regulation And Expression Answer Key

**RC Schank**



### 13 4 Gene Regulation And Expression Answer Key:

*Index Medicus* ,2001      **Cumulated Index Medicus** ,1989      **HLA 1991** Kimiyoshi Tsuji,Miki Aizawa,Takehiko Sasazuki,1992      **Middleton's Allergy** N. Franklin Adkinson,Elliott Middleton (Jr.),2003 Provides coverage of state of the art basic science as well as guidance on the practical aspects of day to day diagnosis and management      **International Journal of Oncology** ,1996      *The Journal of Immunology* ,2009      *Transactions Biochemical Society* (Great Britain),2009      **Proceedings of the National Academy of Sciences of the United States of America** National Academy of Sciences (U.S.),2006      *Abstracts, 13th Annual UCLA Symposia, February 5-March 30, 1984* ,1984      *Encyclopedia of Respiratory Medicine* Geoffrey J. Laurent,Stephen D. Shapiro,2006      *Genetics* Robert J. Brooker,1999 Direct from the Windows 95 development team this comprehensive book disk combo is the most exhaustive source of technical information that computer professionals advanced users and many enthusiastic Windows users need to become experts on the latest release of Windows It contains some of the most sought after tips tricks and productivity secrets available 3 disks      *Biological & Agricultural Index* ,1997      **Chapter Resource 10 How Proteins/Made Biology** Holt Rinehart & Winston,Holt, Rinehart and Winston Staff,2004      **American Journal of Respiratory and Critical Care Medicine** ,2006      **Neuroscience Letters** ,1991-08      **Essentials of Genetics** William S. Klug,Michael R. Cummings,1999 Essentials of Genetics derived from Klug and Cummings highly acclaimed Concepts of Genetics 6 e 2000 the authors capture students interest with up to date coverage of cutting edge topics and research Essentials 3 E will help students connect the science of genetics to the issues of today through interesting and thought provoking applications Essentials 3 E presents a balanced coverage of both classical and modern genetics Courses can be found in biology zoology agriculture and health science      **Applied Science & Technology Index** ,1996      **Genetics Abstracts** ,1999      **Hurst's the Heart, 13th Edition: Two Volume Set** Valentin Fuster,Richard Walsh,Robert A. Harrington,2011-02-12 The trusted landmark cardiology resource thoroughly updated to reflect the latest clinical perspectives Includes DVD with image bank A Doody s Core Title ESSENTIAL PURCHASE for 2011 5 STAR DOODY S REVIEW This is an outstanding choice for those who strive for a firm foundation in cardiovascular medicine as well as an up to date and user friendly source that addresses every discipline in the field The updates and enhancements to this edition have made the book easier to use Doody s Review Service Through thirteen editions Hurst s the Heart has always represented the cornerstone of current scholarship in the discipline Cardiologists cardiology fellows and internists from across the globe have relied on its unmatched authority breadth of coverage and clinical relevance to help optimize patient outcomes The thirteenth edition of Hurst s the Heart continues this standard setting tradition with 19 new chapters and 59 new authors each of whom are internationally recognized as experts in their respective content areas Featuring an enhanced reader friendly design the new edition covers need to know clinical advances as well as issues that are becoming increasingly vital to cardiologists worldwide As in previous editions you will find the most complete overview of

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