



ACROSS

- 3 In prokaryotic cells, the _____ refers to a specific regulatory sequence that, when transcribed into RNA, forms hairpin structures to stop translation when certain conditions are not met.
- 5 _____ is the covalent linkage of a poly(A) tail to a messenger RNA molecule. It is part of the route to producing mature messenger RNA for translation.
- 7 A _____ is a molecule that starts gene expression.
- 9 A _____ sequence is a promoter, enhancer or other segment of DNA where proteins such as transcription factors bind preferentially.
- 11 _____ DNA is a collective label for the portions of the DNA sequence of a chromosome or a genome for which no function has yet been identified.
- 12 N-Formylmethionine, often abbreviated as _____, is a modified form of methionine in which a formyl group has been added to methionine's amino group.
- 13 RNA _____ III transcribes DNA to synthesize ribosomal 5S rRNA, tRNA and other small RNAs.
- 15 A _____ is an RNA molecule that catalyzes a

- chemical reaction.
- 16 5S ribosomal _____ is a component of the large ribosomal subunit in both prokaryotes and eukaryotes.
- 17 The _____ factor is a protein that recognises the termination codon or stop codon in a mRNA sequence on the ribosome.
- 18 The term RNA _____ describes those molecular processes in which the information content is altered in a RNA molecule through a chemical change in the bases themselves.
- 19 _____ receptor also called docking protein, is a dimer composed of 2 different subunits that are associated exclusively with the rough ER in mammalian cells.
- 21 An aminoacyl tRNA _____ is an enzyme that catalyzes the esterification of a specific amino acid or its precursor to one of all its compatible cognate tRNAs to form an aminoacyl-tRNA.
- 23 A transcription _____ is a molecular structure that occurs during the transcription or replication of DNA when DNA helicase and DNA topoisomerase unzip the DNA double strand.
- 28 A _____ is a DNA-binding protein that regulates the expression of one or more genes by decreasing the rate of

- transcription.
- 34 The Trp _____ is a functional in certain bacteria that controls the production of gene products to increase the production of tryptophan in the absence of tryptophan in the environment.
- 38 RNA _____ is a mechanism for RNA-guided regulation of gene expression in which double-stranded ribonucleic acid inhibits the expression of genes with complementary nucleotide sequences.
- 39 A _____ is a protein that decreases gene expression by binding to a transcription factor which contains a DNA binding domain.
- 40 A _____ is a collection of genes under regulation by the same stimulus.
- 41 A _____ region is a stretch of DNA sequences located between clusters of genes that comprise a large percentage of the human genome but contain few or no genes.
- 42 _____ gene expression is the activation of genes within specific tissues of an organism at specific times during development.

DOWN

- 1 RNA _____ I transcribes DNA to synthesize ribosomal RNA.
- 2 Present in eukaryotic cells, RNA _____ II catalyzes

- the transcription of DNA to synthesize precursors of mRNA and most snRNA and microRNA.
- 4 A _____ is a collection of genes under regulation by the same regulatory protein.
- 6 A _____ localizing sequence is an amino acid sequence which acts like a 'tag' on the exposed surface of a protein to target the protein to the cell nucleus through the nuclear pore complex.
- 8 _____ refers to the whole set of gene expression in a cell, tissue, organ, organisms, and species.
- 10 The lac _____ is a functional unit of nucleotide sequences controlling the production of gene products required for the transport and metabolism of lactose in Escherichia coli and some other enteric bacteria.
- 14 A _____ reading frame is a portion of an organism's genome which contains a sequence of bases that could potentially encode a protein.
- 20 A single nucleotide _____ is a DNA sequence variation occurring when a single nucleotide in the genome differs between members of a species
- 22 A gene regulatory _____ is a collection of DNA segments in a cell which interact with each

- other and with other substances in the cell, to govern the rates at which the associated genes are transcribed.
- 24 DNA _____ involves the addition of a methyl group to DNA.
- 25 The _____ box is the sequence TATAAT of six nucleotides that is an essential part of a promoter site on DNA for transcription to occur in prokaryotes.
- 26 _____ refers to features such as chromatin and DNA modifications that are stable over rounds of cell division but do not involve changes in the underlying DNA sequence of the organism.
- 27 The _____ is the set of all messenger RNA molecules produced in one or a population of cells.
- 28 Tryptophan _____ is a DNA binding protein which silences a set of genes involved in tryptophan production.
- 29 _____-loop intramolecular base pairing is a pattern that can occur in single-stranded DNA or, more commonly, in RNA. The structure is also known as a hairpin or hairpin loop.
- 30 _____ base pairing is a process of using modified base pairs in the first base of the anti-codon. It describes how the genetic code makes up for the disparity in the number of codons and tRNA molecules
- 31 A _____ is a DNA-binding protein that regulates one or more genes by increasing the rate of transcription by recruiting RNA polymerase to the promoter region.
- 32 Polyribosomes, or _____s, are a cluster of ribosomes, bound to an mRNA molecule.
- 33 A _____ is a protein that increases gene expression by binding to an activator or transcription factor which contains a DNA binding domain.
- 35 _____ factors are a set of proteins that facilitate the events of protein synthesis from the formation of the first peptide bond to the formation of the last one.
- 36 The lac _____ is a DNA-binding protein which inhibits the expression of genes coding for proteins involved in the metabolism of lactose in bacteria.
- 37 RNA-_____ proteins are typically cytoplasmic and nuclear proteins that associate with and facilitate the translation of RNAs.