



residue is labeled and cleaved from the peptide without disrupting the peptide bonds between other amino acid residues.

- 11 _____ is a process that involves the use of the centripetal force for the separation of mixtures.
- 12 _____ are nucleotides lacking a three prime hydroxyl group on their deoxyribose sugar. After one is added by a DNA polymerase to a growing nucleotide chain, no further nucleotides can be added.
- 14 A _____ is a hairlike appendage found on the surface of many bacteria.
- 15 A hybridization _____ is a labeled fragment of DNA of variable length which is used to detect in DNA or RNA samples the presence of nucleotide sequences that are complementary to the sequence in the fragment.
- 17 _____ is a general term in biochemistry that applies to any use of an antibody-based method to detect a specific protein in a sample.
- 19 _____ is the process of separating molecules in solution by the difference in their rates of diffusion through a semipermeable membrane.
- 21 A restriction _____ is a procedure which uses a restriction enzyme to selectively cleave DNA strands into shorter segments, which are more suitable for analytical techniques such as chromatography.
- 24 A _____ is a phage genome inserted as part of the linear structure of the DNA chromosome of a bacterium.
- 26 In _____ sequencing, DNA is broken up randomly into numerous small segments, which are sequenced. The process is repeated until multiple overlapping reads for the target DNA are obtained.
- 27 Molecular _____ refers to the procedure of isolating a defined DNA sequence and obtaining multiple copies of it in vivo.
- 28 _____ polymerase is a thermostable DNA polymerase named after the thermophilic bacterium *Thermus aquaticus* from which it was isolated. This enzyme is able to withstand the high temperature required during PCR.
- 29 A cloning _____ is a small DNA vehicle that carries a foreign DNA fragment.

ACROSS

- 1 The _____ factor (also known as F factor or sex factor) is a bacterial DNA sequence that allows a bacterium to produce a sex pilus necessary for conjugation.
- 3 The _____ chain reaction is a technique widely used in molecular biology to exponentially amplify a fragment of DNA by in vitro enzymatic replication.
- 5 The term DNA _____ encompasses biochemical methods for determining the order of the nucleotide bases in a DNA oligonucleotide.
- 6 _____ bacteria refers to bacteria which have been genetically engineered.
- 8 _____ chromatography is a chromatographic method of separating biochemical mixtures, based on a highly specific biologic interaction such as that between antigen and antibody or enzyme and substrate.
- 13 _____ is the collective term for laboratory techniques which separate

analytes dissolved in a mobile phase by passing them through a stationary phase.

- 16 _____ electrophoresis separates biological macromolecules based on their size to charge ratio in the interior of a very narrow tube filled with an electrolyte.
- 18 DNA _____ is an analytical technique used to separate DNA fragments by size through the use of an electric field which forces the fragments to migrate through a gel.
- 20 _____ is a separation process in which a certain quantity of a mixture is divided up in a large number of smaller quantities in which the composition changes according to a gradient.
- 22 In _____ technique an unknown amount of antigen is affixed to a surface, and then a specific labeled antibody is washed over the surface so that it can bind the antigen.
- 23 _____ refers to the liquid or clear fluid above a sediment or precipitate.
- 25 _____-PAGE, officially

sodium dodecyl sulfate polyacrylamide gel electrophoresis, is a technique used to separate proteins according to their electrophoretic mobility.

28 _____ is the genetic alteration of a cell resulting from the uptake and expression of foreign genetic material.

30 The _____ is a centrifuge optimized for spinning a rotor at very high speeds, capable of generating acceleration as high as 1,000,000 g.

- 31 Ion-_____ chromatography is a process that allows the separation of ions and polar molecules based on the charge properties of the molecules.
- 32 In peptide mass _____ an unknown protein is cleaved into peptides by a protease such as Trypsin to form a collection of peptides serving as a unique identifier of the unknown protein.

DOWN

- 2 Gel _____ is a technique used for the

- separation of biological molecules using an electric field.
- 3 A _____ is a DNA molecule separate from chromosomal DNA which is capable of autonomous replication. It is typically circular and double-stranded.
- 4 Thin _____ chromatography is a chromatography technique involving a stationary phase consisting of a thin patina of adsorbent material immobilised on a flat, inert carrier sheet.
- 7 A _____ enzyme is an enzyme that cuts double-stranded DNA in such a way that the fragments from different chromosomes or genes can be spliced together by ligases.
- 9 _____ is a material used to form a common type of electrophoresis gel which is derived from the cell membranes of some species of red algae or seaweed.
- 10 _____ degradation is a method of sequencing amino acids in a peptide in which the amino-terminal