

1. The PCR reaction mixture contains two primers (引子) that their sequences are complementary to the flanks of the amplification target. Annealing generally operates between 50-65 °C and the primers bind to the complementary regions of the template in this step. Optimal annealing temperature depends on the sequences of the primers. The primers serve as initiating molecules for the growing strands when properly annealed.
2. Protein microarray has become an important research tool in proteomics (蛋白質體學). While the combination of two-dimensional gel electrophoresis and mass spectrometry is very useful for discovery-oriented proteomics, protein microarray is well suited for the study of a collection of related proteins. The most important advantage of protein microarray is the ability to perform multiplexed analysis.
3. The development of a low-cost, home-care enzymatic biosensor for kidney function could help reduce rejection in kidney transplant patients. The enzymatic biosensor would measure serum creatinine (肌酸酐) concentration, which is a widely used marker for kidney function. Creatinine concentrations in serum can be measured with enzymatic bioluminescence reaction, which produces light proportional to adenosine triphosphate (ATP) concentrations.
4. Interpretation of G2 Biographer (生物記錄器) results should be based on the trends and patterns seen with several sequential readings over time. The G2 Biographer may not be appropriate for use every day or with every patient. Assessing patient motivation and presenting patients with a realistic picture of G2 Biographer benefits and limitations are essential for successful use.
5. The aim of this work is to study the antioxidant activity of astaxanthin (蝦紅素), the most abundant carotenoid (類胡蘿蔔素) among marine microalgal species. For that purpose, the carotenoids were incorporated into egg-yolk phosphatidylcholine multilamellar liposomes (PCL) and challenged by different reactive oxygen species which were generated by classical lipoperoxidation initiator.
6. Various molecular layers leading to DNA microarrays were successfully prepared and analyzed with contact angle goniometer (量角器), atomic force microscope, and grazing angle FTIR spectrometer. Fluorescence(螢光) intensity of the DNA microarray after the hybridization critically depends on the surface density of the immobilized target oligodeoxynucleotides.
7. Although biotechnology has been used in some form for centuries, techniques have become much more sophisticated in the past few decades. In the last several years biotechnology has undergone a revolution through the advent of genetic engineering, the use of recombinant (重組) DNA technology to expand the potential of bacteria, viruses, and yeast cells and other fungi as miniature biochemical factories. Cultured plant and animal cells are also used as recombinant cells and organisms.
8. Burning plastic wastes has not been a solution, because combustion (燃燒) releases airborne pollutants; some plastics produce hydrogen cyanide, and burning PVC produces hydrogen chloride. These harmful chemicals must be removed from the combustion products before they are released into the air. At least a partial solution to this devastating environmental problem is the development and use of bioplastics (生物塑膠) that are readily broken down by natural elements and that action of microorganisms (微生物).
9. Two types of metabolites (代謝物) are synthesized by microbial cells: primary and secondary metabolites. Primary metabolites are produced during the organism's growth phase; these

compounds are essential to an organism's metabolism (代謝) and can be intermediary metabolites or end products. Secondary metabolites are not essential to cell growth or function and are characteristically produced quite late in the growth cycle; they are the end products of metabolism and are usually derived from primary metabolites or the intermediates of primary metabolites.