

DICTIONARY OF BIOTECHNOLOGY

SECOND EDITION

James Coombs



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in a molecule of any compound. Molecular weight may be expressed in terms of the dalton.

molecular weight marker A protein, polypeptide, nucleic acid, oligonucleotide, etc. used as a reference material in analytical techniques such as gel filtration chromatography, electrophoresis and density gradient centrifugation.

molecule A grouping of defined atoms, joined in a particular way.

Molisch test A quantitative test for the presence of carbohydrates in a biological sample. Drops of α -naphthol are added to the sample and concentrated sulphuric acid is then poured down the side of the test tube. The presence of carbohydrate is indicated by the formation of a violet ring at the juncture of the two solutions.

monoamine oxidase (EC 1.4.3.4) A mitochondrial enzyme that catalyses the oxidation of a wide variety of amines with the production of aldehydes. Monoamine oxidases are found in high concentrations in mammalian liver, kidney, intestine and pancreas. The enzyme's functions include the detoxification of poisonous amines and the breakdown of adrenaline at adrenergic nerve endings. These oxidases are flavoproteins; molecular oxygen acts as the hydrogen acceptor and becomes reduced to hydrogen peroxide.

monocistronic Descriptive of a length of DNA that codes for only one peptide, in

produced contains a mixture of all. These are produced by different lymphocytes and correspond to genetic determinants of the antigen. possible for a particular line of lymphocytes to be maintained *in vitro*, the result would produce a single type of antibody. In contrast, myelomas can produce antibodies in large quantities, but not against which they are directed. known. If a mutant strain of such cells that has lost the ability to produce antibodies is fused with a line of cells that produce an antibody, the resulting hybridoma will be capable of producing a single type of antibody characteristic of the non-malignant parent cells. Such cells may then be injected into the body of the same line as produced the tumour cells for the fusion. Tumours develop in these animals and produce a monoclonal antibody, corresponding to the clone that accumulates in high concentration in the animal serum. Alternatively, a single clone can be grown *in vitro*, and the antibody it produces harvested from the culture medium. A wide range of monoclonal antibodies have been produced by this routine technique. These antibodies have been targeted against a very wide range of proteins, haptens, viruses and cell membrane components. Monoclonal antibodies are used in diagnostic (immunoassays) (e.g., in screening kits for allergens, certain types of cancers, etc.) cases, bacterial infections, etc. applications include the localization of specific proteins in histochemical investigations, labelling of cells for