DICTIONARY OF MICROBIOLOGY and MOLECULAR BIOLOGY

Second Edition

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are directly mutagenic: e.g. O^6-alkylguanine can pair with thymine during subsequent DNA replication, resulting in G·C-to-A·T transitions, and alkylation of the O-4 position of thymine can cause A·T-to-G·C transitions. Most other lesions (e.g. N^7-alkylguanine, N^3-alkyladenine) are not directly mutagenic, but they may be lethal unless repaired by the cell (e.g. alkylation of the N-3 position of adenine blocks replication forks); various DNA REPAIR systems can recognize and repair alkylated bases (see e.g. ADAPTIVE RESPONSE).

The mutagenic effects of a given alkylating agent depend largely on the nature of the lesions it produces. For example, MNNG (q.v.), EMS (ethylmethane sulphonate) and MNU (*N*-methyl-*N*-nitrosourea: see *N*-NITROSO COMPOUNDS) produce relatively more directly mutagenic lesions (particularly O^6-alkylguanine), while MMS (methylmethane sulphonate) produces higher proportions of e.g. N^7-methylguanine and N^3-methyladenine but relatively little O^6-methylguanine. However, in organisms (such as *Escherichia coli*) which have an inducible error-prone repair system (see SOS SYSTEM), MMS can be mutagenic by causing lesions which induce this system; even in the case of directly mutagenic agents such as MNNG, a proportion of the mutations induced may be due to error-prone repair in *E. coli* [JB (1985) *163* 213–220].

alkyldimethylbenzylammonium chloride See QUATERNARY AMMONIUM COMPOUNDS.

***N*-alkylnitrosoureas** See *N*-NITROSO COMPOUNDS.

all-glass impinger (bubbler) An instrument used e.g. for sampling the airborne microflora. (See also AIR.) Essentially, it consists of a vertical glass cylinder, containing a volume of liquid, and a longer, narrower glass tube fitted coaxially within the cylinder and partly submerged in the liquid; when suction is applied to the annular space, air is drawn in through the narrow tube and bubbles up through the liquid — during which process particles are transferred from the air to the liquid.

allantoid Sausage-shaped; elongated and slightly curved with rounded ends.

allele (allelomorph) Any of one or more alternative forms of a given GENE; both (or all) alleles of a given gene are concerned with the same trait or characteristic, but the product or function coded for by a particular allele differs, qualitatively and/or quantitatively, from that coded for by other alleles of that gene. Three or more alleles of a given gene constitute an *allelomorphic series*. In a diploid cell or organism the members of an allelic pair (i.e., the two alleles of a given gene) occupy corresponding positions (loci) on a pair of homologous chromosomes; if these alleles are genetically identical the cell or organism is said to be *homozygous* — if genetically different, *heterozygous* — with respect to the particular gene. A *wild type allele* is one which codes for a particular phenotypic characteristic found in the WILD TYPE strain of a given organism. (See also DOMINANCE.)

allelomorph *Syn.* ALLELE.

allergen An antigen (or autocoupling HAPTEN — e.g., certain drugs) which can initiate a state of HYPERSENSITIVITY (commonly IMMEDIATE HYPERSENSITIVITY) or which can provoke a hypersensitivity reaction in individuals already sensitized with the allergen.

allergic alveolitis See EXTRINSIC ALLERGIC ALVEOLITIS.

allergy (1) A condition in which contact with a given allergen provokes a TYPE I REACTION. (See also PRAUSNITZ–KÜSTNER TEST.) (2) A condition in which contact with a given allergen gives rise to any manifestation of HYPERSENSITIVITY (see e.g. EXTRINSIC ALLERGIC ALVEOLITIS). (3) Formerly, the condition of a PRIMED individual.

allergy of infection An early name for DELAYED HYPERSENSITIVITY.

Allerton disease An African CATTLE DISEASE which involves a mild febrile condition followed by the appearance of skin nodules; it is caused by the bovine mammillitis virus and is apparently similar or identical to pseudo-LUMPY SKIN DISEASE.

Allescheria boydii See PSEUDALLESCHERIA.

alloantigen Antigen from a genetically different individual of the same species.

allochromasy Gradual, spontaneous chemical modification which occurs in the solutions of certain dyes — a single dye becoming a mixture of dyes. (See e.g. polychrome METHYLENE BLUE and NILE BLUE A.)

allochthonous Not indigenous to a given environment. (cf. AUTOCHTHONOUS sense 1.)

allogeneic Derived from a genetically different individual of the same species. (cf. SYNGENEIC; XENOGENEIC.)

Allogromia See FORAMINIFERIDA.

Allogromiina See FORAMINIFERIDA.

allolactose β-D-Galactopyranosyl-(1→6)-D-glucopyranose: a minor product of β-galactosidase action on LACTOSE; it is the natural inducer of the LAC OPERON in *Escherichia coli*.

Allomonas A genus of bacteria (family VIBRIONACEAE) which have been isolated from fresh water, sewage and faeces; GC%: ca. 57. Type species: *A. enterica* [IJSB (1984) *34* 150–154].

Allomyces A genus of fungi (order BLASTOCLADIALES) which occur in moist soils, muds, and water. The thallus is a branched, coenocytic mycelium which is attached to the substratum by branching rhizoids; in at least

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Page 00003