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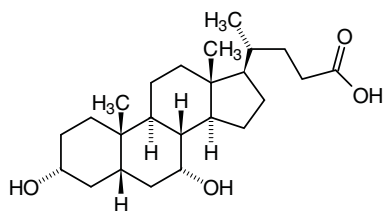
chenodeoxycholate

strate to an enzyme by 50%, to the dissociation constant, K_i , of the enzyme-inhibitor complex; it is:

$$I_{50} = K_i (1 + S/K_m),$$

where S is the substrate concentration and K_m the Michaelis constant for the enzyme-substrate complex.

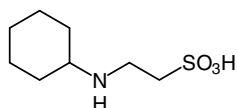
chenodeoxycholate or **chenodiol** the anion of (3 α ,5 β ,7 α)-3,7-dihydroxycholan-24-oic acid; a major component of bile in some species (hens, geese) but a minor component in humans. It is used therapeutically to decrease the synthesis of cholesterol and to help dissolve cholesterol gallstones.



Cherenkov counter or **Cerenkov counter** a device for counting charged particles, or radionuclides emitting them, that depends on **Cherenkov radiation**.

Cherenkov radiation or **Cerenkov radiation** a radiation of bluish light, consisting of photons, emitted when charged particles, especially high-energy beta particles, pass through either a solid or liquid medium at velocities greater than that at which light passes through the same medium. The effect is analogous to the creation of a sonic boom that occurs when an object exceeds the speed of sound in a medium. [After Pavel Alekseyevich Cherenkov (1904–1990), Russian-born Soviet physicist.]

Ches *abbr. for* 2-(cyclohexylamino)ethanesulfonic acid; a compound with similar properties to a **Good buffer substance**; pK_a (25°C) = 9.3.



chewing gum *see* **chicle**.

chi *symbol:* χ (lower case) or X (upper case); the twenty-second letter of the Greek alphabet. For uses *see* **Appendix A**.

chiasma (*pl.* **chiasmata**) **1** (*in genetics*) a connection formed between **chromatids**, visible during **meiosis**, thought to be the point of the interchange involved in crossing-over. **2** (*or (esp. US) chiasm* (*pl.* **chiasms**)) (*in anatomy*) a decussation or intersection, as of two nerves; e.g. optic chiasma.

chicle a mixture of *cis*- and *trans*-1,4-polyprenoids obtained from the evergreen tree, *Achras sapota*; the original chewing gum base.

Chico an insulin receptor substrate-like protein in *Drosophila* that links the insulin receptor to phosphatidylinositol 3-kinase and then protein kinase B and protein synthesis. A mutation of the corresponding gene results in fruit flies less than half the normal size.

chimera (*or (esp. Brit.) chimaera* (*in genetics*)) an organism comprising tissues of two or more **genotypes**. Chimeras can occur as a result of mutation, abnormal distribution of chromosomes, grafting, or genetic manipulation. For example, a chimera can be created by mixing the cells from embryos of two different animal species at the blastocyst stage of development and implanting the chimeric embryo in a surrogate mother to continue development. When the species are sheep and goats, the resulting chimeric progeny are called 'geep', or 'shoats'. Alternatively, in mice, genetically manipulated mouse embryonic stem (ES) cells are injected into the blastocoe of a blastocyst. Later stages of development are completed in the reproductive tract of a surrogate mother to produce chimeric mice. These are readily identified if the strain from which the ES

chi sequence

cells are derived has a different coat colour from that of the strain producing the blastocyst. Production of chimeras is a step in the generation of mice carrying gene knockouts produced by homologous recombination in ES cells. *See* **mosaic**, **transgenic**, **chimeric molecule**. —**chimeric** or **chimaeric** *adj.*

chimeraplast any RNA-DNA chimeric oligonucleotide used to induce base pair conversions at the genomic level and used in gene repair strategies for gene therapy. —**chimeraplastic** *adj.*

chimeric molecule **1** any of the hybrid DNA molecules formed when DNAs from different sources are digested with the same **restriction endonuclease** and the digests are mixed. The DNA fragments in the mixture become associated by hydrogen bonds between complementary sequences to form new arrangements, which may be converted into covalently linked molecules by the action of DNA ligase. This process can produce **chimeric plasmids** and other chimeric structures. **2** a **chimeric protein** (*or* **fusion protein**) is a protein obtained by the insertion or substitution of a partial sequence from one protein into another, typically using cDNA technology. The resultant protein thus has elements of both the original proteins. Such proteins frequently form naturally as a result of chromosomal translocations during neoplastic transformation. *See* **acute myeloid leukemia**. **3** a recombinant antibody that has, e.g., structural characteristics of both human and mouse antibodies.

chimerin any of several related proteins that function as GTPase-activating proteins, specific for the p21 Ras-related Rac GTPase. They include n-chimerin, and α - and β -chimerins. n-Chimerin is a cerebellar protein, and β -chimerin is expressed in testis. They are phorbol ester receptors, with an N-terminal domain similar to the zinc-finger region of protein kinase C, and a C-terminal domain similar to the product of **BCR**. Through their action on Rac, they lead to changes in cytoskeletal organization.

chimyl alcohol glycerol 1-hexadecyl ether, (+)-3-(hexadecyloxy)-1,2-propanediol; a hydrolysis product of **ether lipids**.

Chinese restaurant syndrome *see* **monosodium glutamate**.

ChIP *abbr. for* chromatin immunoprecipitation.

CHIP 28 *abbr. for* channel-forming integral membrane protein 28; *also called* AQP 1 (*see* **aquaporin**).

chiral describing a chemical compound that displays **chirality**.

chiral drug a single pure enantiomer of a specified drug rather than the racemate; the enantiomers may have very different pharmacological effects, e.g. in the case of propoxyphene and levopropoxyphene.

chirality topological handedness; the property of nonidentity of an object with its mirror image. A chiral chemical compound, i.e. one that possesses chirality, is one that cannot be superimposed on its mirror image, either as a result of simple reflection or after rotation and reflection. If superposition can be achieved then the molecule is said to be **achiral**. Chirality is most commonly due to the presence of one or more **chiral centres** (formerly referred to as asymmetric carbon atoms) or the presence of a **chiral axis** (as in allene structures, some of which are found in natural products). Rarely, chirality may also result from the presence of a chiral plane. *See also* **prochiral**. [From Greek *kheir*, hand.]

chiral methyl a carbon atom carrying the three hydrogen isotopes, i.e. $-C^1H^2H^3H$.

chiral recognition the differentiation of the enantiomers of a compound. This can be achieved by living organisms, chiral molecules, enzymes, drug receptors, etc.

chiroid (*rare*) any molecule that has **chirality**.

chiroptical describing any of the phenomena that depend on the ability of chiral and other intrinsically asymmetric molecules to rotate the plane of polarized light, known collectively as **optical activity**. Such phenomena include **optical rotation**, **optical rotatory dispersion**, and **circular dichroism**. The term is also applied to any of the techniques used for investigating these phenomena.

chi sequence or **chi site** a sequence of base pairs first discovered in a phage lambda mutant, called *chi*. These mutants were found to have single base pair changes creating sites that stimulate **recombination**. Characteristic of chi sites is a nonsymmetrical sequence of eight base pairs, consensus sequence:

5' GCTGGTGG 3'.

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