

# BIOCHEMISTRY AND MOLECULAR BIOLOGY

## REVISED EDITION

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tor.  
**I** *symbol for 1* iodine. **2** an iodo group in an organic compound. **3** a residue of the  $\alpha$ -amino acid L-isoleucine (alternative to Ile). **4** a residue of the ribonucleoside inosine (alternative to Ino).

**I** *symbol for 1* electric current (preferred alternative to *i*). **2** intensity; the subscripts e (for energetic), p (for photon), or v (for visible) may be added to distinguish between radiant intensity, photon intensity, and luminous intensity, respectively. **3** ionic strength; the subscripts c or m may be added to indicate whether it is expressed based on concentration or molality respectively. **4** the inductive effect of a particular chemical group in an organic compound.

**IA** *symbol for N<sup>6</sup>-(2-isopentenyl)adenosine, a hypermodified base.*

**IAA** *abbr. for indole-3-acetic acid or indoleacetate.*

**IAN** *abbr. for indoleacetoneitrile.*

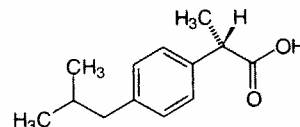
**IAP** *abbr. for islet-activating protein; see pertussis toxin.*

**iatrogenic** describing a condition or disease induced unintentionally by a physician through his or her diagnosis, manner, or therapy. —**iatrogenicity** *n.*

**I-band** *abbr. for isotropic band.* The I-bands of striated muscle contain the **thin filaments** and correspond to the light bands. The name derives from the fact that they are isotropic in polarized light. *See also sarcomere.*

**IBMX** *abbr. for isobutylmethylxanthine.*

**ibuprofen** 2-(4-isobutylphenyl)propionic acid; a nonsteroidal anti-inflammatory agent of the substituted propionic acid type; others of this type are flurbiprofen, **ketoprofen**, and naproxen. They inhibit the cyclooxygenase activity of **prostaglandin-endoperoxide synthase**, reversibly over short time intervals, followed by time-dependent irreversible inactivation, due probably to conformational rather than covalent changes. The racemic mixture is present in many over-the-counter drugs, but the (*S*)-enantiomer is the active form. *Proprietary names include: Advil; Brufen; Motrin.*



(*S*)-ibuprofen

**ic** or **i.c.** *abbr. for intracutaneous or intracutaneously.*

**IC** *abbr. for internal conversion.*

**IC<sub>50</sub>** **1** the median inhibitory concentration (in mol L<sup>-1</sup>) of an antagonist, i.e. the concentration that reduces a specified response to 50% of its former value; *compare EC<sub>50</sub>*. **2** the median inhibitory concentration (in mol L<sup>-1</sup>) of an agent (agonist or antagonist), i.e. the concentration that causes a 50% reduction in the specific binding of a radioligand.

**ICAM** *abbr. for intercellular adhesion molecule;* any of several type I membrane glycoproteins of the immunoglobulin superfamily. They act as ligands for leukocyte adhesion to target cells, in conjunction with **LFA-1**; in fact LFA-1-ICAM links mediate adhesion between many cell types. There are three subclasses. **ICAM-1** (or CD54), of molecular mass 90–115

55–65 kDa, are constitutively expressed on endothelial cells, some lymphocytes, monocytes, and dendritic cells. **ICAM-2** (human): database code ICA2\_HUMAN, 275 amino acids (30.62 kDa). **ICAM-3** (or CD50), of molecular mass 55 kDa, are constitutively expressed on monocytes, granulocytes, and lymphocytes; upon physiological stimulation they rapidly and transiently phosphorylated on serine residues. **ICAM-3** (human): database code ICA3\_HUMAN, 544 amino acids (59.32 kDa).

**ICD** (*in clinical chemistry*) *abbr. for isocitrate dehydrogenase (EC 1.1.1.41).*

**ice** the solid form of water that can exist at temperature above the triple point of water (273.16 K at 101 325 Pa).

**iceberg** a metaphor used to describe an interpretation of anomalous entropies of solution of noble gases and other polar substances in water, suggesting that water tends to organize itself into quasi-solid supramolecular structures around molecules of such substances. In the case of alkyl compounds, this tendency increases markedly with the length of the hydrocarbon chain.

**ICE-like protease** any of a family of endopeptidases that structurally resemble **interleukin-1 $\beta$  convertase** (ICE). They are involved in **apoptosis**, being implicated in the proteolysis that causes cell death.

**I cell 1** or **CCK cell** any of a group of cells, widely distributed in the duodenal and jejunal mucosa, that produce **cholecystikinin**. So named because their histological features are intermediate between those of **S cells** and **L cells**. **2** a type of inclusion cell. *See also I-cell disease.*

**I-cell disease** or **inclusion-cell disease** or **mucopolysaccharidosis type I** an autosomal recessive disease in which most of the lysosomal enzymes in the connective tissue (fibroblasts) contain large inclusion bodies of glycoaminoglycans and glycolipids as a result of the deficiency of several lysosomal hydrolases. These enzymes, which are synthesized in the endoplasmic reticulum, are secreted into the extracellular medium rather than being directed to lysosomes. This is due to the absence of a mannose 6-phosphate marker on the carbohydrate moieties of these hydrolytic enzymes. Cause of a deficiency in an enzyme required for mannose 6-phosphorylation. The failure of the phosphorylation in the Golgi network means that the enzymes are not segregated into the **mannose 6-phosphate receptors** into the appropriate vesicles in the *trans* Golgi network. The patients have a normally high level of lysosomal enzymes in their body fluids. A milder form of I-cell disease is Hurler syndrome (**Hurler syndrome**).

**ice point** the temperature at which ice melts. It is taken as the temperature (273.15 K) at which ice and water are in equilibrium at standard pressure (101 325 Pa). It was used as the reference temperature on the Celsius scale, but the kelvin is now used instead on the temperature at the **triple point** of water (273.15 K).

**ICF** *abbr. for intracellular fluid.*

**ichthyotocin** an alternative name for **isotocin**.

**icosa+** or (before a vowel) **icos+** *comb. form* recommending denoting twenty or twenty times. *Also (formerly) eicos+.* (*Note:* the eicos(a)+ variant is still always used for C<sub>20</sub> fatty acids and skeletally related compounds such as eicosanoids.)

**icosadeltahedron** (*pl. icosadeltahedra*) any solid geometric polyhedron with 20 faces.

Dr. Reddy's Laboratories, Inc. v. Celgene Corp.

IPR2018-01504

Exhibit 2033, Page 3