

## Topic Page: [cysteine](#)

Definition: **Cysteine** from *Black's Medical Dictionary, 43rd Edition*

An AMINO ACID that is an essential constituent of many of the body's ENZYMES.

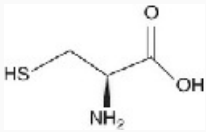


Image from: [\(DHB\) in The Encyclopedia of Farm Animal Nutrition](#)

### Summary Article: **cysteine**

From *The Columbia Encyclopedia*

(sĭs'tēn), organic compound, one of the 20 amino acids commonly found in animal proteins. Only the L-stereoisomer participates in the biosynthesis of mammalian protein. It is particularly abundant in the proteins of hair, hooves, and the keratin of the skin. Cysteine's importance is related to the presence of a sulfur-containing thiol group in its side chain. This group participates in the catalytic reactions of certain enzymes, such as that of papain, the enzyme from papaya latex used to make commercial meat tenderizers. The thiol group of one cysteine residue is capable of combining with the thiol group of another to form a disulfide bridge, either linking two peptide chains together, as in the case of insulin, or causing a single peptide chain to fold back on itself, making a loop. This latter effect on the secondary structure of proteins is evidently of great importance in maintaining the proper configuration of both structural proteins and enzymes. Two cysteine molecules linked together by a disulfide linkage make up the amino acid cystine, often occurring as a separate entry in lists of common amino acids. A major complication of cystinuria, an inherited metabolic disease, one of whose symptoms is a twentyfold to thirtyfold increase in urinary excretion of cystine, is the precipitation of this relatively insoluble amino acid in the kidney, impairing its function. A similar sort of renal failure often accompanies cystinosis, another inherited disease. Cystine was isolated from a urinary calculus in 1810 and from horn tissue in 1899. The reduction of cystine to cysteine was reported in 1884, and the structures of the two amino acids were proved by chemical synthesis in 1903–4. Neither cysteine nor cystine is essential to the diet of man; cystine and cysteine are interconvertible, and cysteine is made in the body from serine and methionine.

### **APA**

Chicago

Harvard

MLA

cysteine. (2018). In P. Lagasse, & Columbia University, *The Columbia encyclopedia* (8th ed.). New York, NY: Columbia University Press. Retrieved from <https://search.credoreference.com/content/topic/cysteine>



*The Columbia Encyclopedia*, © Columbia University Press 2018



*The Columbia Encyclopedia*, © Columbia University Press 2018

## APA

cysteine. (2018). In P. Lagasse, & Columbia University, *The Columbia encyclopedia* (8th ed.). New York, NY: Columbia University Press. Retrieved from <https://search.credoreference.com/content/topic/cysteine>

## Chicago

"cysteine." In *The Columbia Encyclopedia*, by Paul Lagasse, and Columbia University. 8th ed. Columbia University Press, 2018. <https://search.credoreference.com/content/topic/cysteine>

## Harvard

cysteine. (2018). In P. Lagasse & Columbia University, *The Columbia encyclopedia*. (8th ed.). [Online]. New York: Columbia University Press. Available from: <https://search.credoreference.com/content/topic/cysteine> [Accessed 15 October 2019].

## MLA

"cysteine." *The Columbia Encyclopedia*, Paul Lagasse, and Columbia University, Columbia University Press, 8th edition, 2018. *Credo Reference*, <https://search.credoreference.com/content/topic/cysteine>. Accessed 15 Oct. 2019.