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Glutamine

National Cancer Institute

Source

National Cancer Institute. *Glutamine*. NCI Thesaurus. Code C522.

A nonessential amino acid. Glutamine can donate the ammonia on its side chain to the formation of urea (for eventual excretion by the kidneys) and to purines (necessary for the synthesis of nucleic acids). Glutamic acid-to-glutamine conversion, in which an ammonia group is added to glutamic acid (catalyzed by glutamine synthase), is of central importance in the regulation of toxic levels of ammonia in the body. This agent is a substrate for the production of both excitatory and inhibitory neurotransmitters (glutamate and GABA) and is also an important source of energy for the nervous system. Glutamine may become a conditionally essential amino acid during certain catabolic states.