

[Open Peer Review on Qeios](#)

Citrulline

National Cancer Institute

Source

National Cancer Institute. *Citrulline*. NCI Thesaurus. Code C53406.

A non-essential amino acid. In hepatocytes, L-citrulline is synthesized in the urea cycle by the addition of carbon dioxide and ammonia to ornithine. L-citrulline is converted into L-arginine by the enzymes argininosuccinate synthetase and argininosuccinate lyase in the presence of L-aspartate and ATP. Subsequently, L-arginine is converted to nitric oxide by nitric oxide synthase and L-citrulline is regenerated as a by-product.