

The essential amino acid lysine acts as precursor of glutamate in the mammalian central nervous system

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Abstract

Lysine has long been recognized as an [essential amino acid](#) for humans and the lack or low supply of this compound in the diet may lead to mental and physical handicaps. Since lysine is severely restricted in cereals, the most important [staple food](#) in the world, the understanding of its biological roles must be a major concern. Here we show that lysine is an important precursor for [de novo synthesis](#) of [glutamate](#), the most significant excitatory [neurotransmitter](#) in the mammalian central nervous system. We also show that the synthesis of glutamate from lysine, which is carried out by the saccharopine pathway, is likely to take place in neurons.