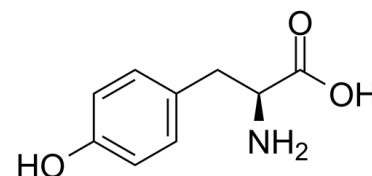


Data Sheet

Product Name:	L-Tyrosine
Cat. No.:	CS-8013
CAS No.:	60-18-4
Molecular Formula:	C ₉ H ₁₁ NO ₃
Molecular Weight:	181.19
Target:	Endogenous Metabolite
Pathway:	Metabolic Enzyme/Protease
Solubility:	1M HCl : 50 mg/mL (275.95 mM; Need ultrasonic); DMSO : < 1 mg/mL (insoluble or slightly soluble)



BIOLOGICAL ACTIVITY:

L-Tyrosine is a non-essential amino acid which can inhibit **citrate synthase** activity in the posterior cortex. IC₅₀ & Target: Citrate synthase^[1] **In Vitro:** Results show that L-Tyrosine in vitro inhibits citrate synthase activity in the posterior cortex (2.0 and 4.0 mM), malate dehydrogenase is not altered by L-Tyrosine and succinate dehydrogenase is increased in the posterior cortex (0.1, 1.0, 2.0 and 4.0 mM), hippocampus (1.0, 2.0 and 4.0 mM), striatum (4.0 mM) and liver (0.1, 1.0, 2.0 and 4.0 mM). When complex I activity is analyzed, inhibition is observed in hippocampus (4.0 mM). In addition to inhibition in the hippocampus, complex II also is inhibited in the posterior cortex (0.1, 1.0, 2.0 and 4.0 mM) and liver (1.0, 2.0 and 4.0 mM). For complex II–III, activity is not altered by L-Tyrosine, and complex IV activity has decreased in the posterior cortex (1.0, 2.0 and 4.0 mM) following treatment with L-Tyrosine^[1]. **In Vivo:** The acute administration of L-Tyrosine inhibits the activity of citrate synthase in the posterior cortex and liver; however, in the striatum, the activity is increased. The results also demonstrate that acute administration of L-Tyrosine inhibits malate dehydrogenase and complex II, II–III and IV of the mitochondrial respiratory chain activity in the posterior cortex and liver of rats. The succinate dehydrogenase enzyme and complex I activity are inhibited in the posterior cortex and increased in the striatum. Furthermore, energy metabolism in the hippocampus is not amended by an acute administration of L-Tyrosine^[1].

PROTOCOL (Extracted from published papers and Only for reference)

Kinase Assay: ^[1]Posterior cortex, hippocampus, striatum and liver supernatants of 30-day-old rats are pre-incubated for 30 min at 30°C in the presence of L-Tyrosine (Tyr) at final concentrations ranging from 0.1, 1.0, 2.0 or 4.0 mM, and the activities of citrate synthase, malate dehydrogenase and respiratory chain complexes I, II, II–III and IV are evaluated^[1]. **Animal Administration:** L-Tyrosine is dissolved in saline solution and pH is adjusted to 7.4.^[1]The equivalent of 500 mg/kg body weight of free L-Tyrosine is intraperitoneally administered in 30-day-old rats. Controls receive in saline solution. About 1 h after injections, rats are killed by decapitation without anesthesia^[1].

References:

[1]. Ferreira GK, et al. Effect of L-tyrosine in vitro and in vivo on energy metabolism parameters in brain and liver of young rats. Neurotox Res. 2013 May;23(4):327-35.

CAIndexNames:

L-Tyrosine

SMILES:

N[C@@H](CC1=CC=C(C=C1)O)C(O)=O

Caution: Product has not been fully validated for medical applications. For research use only.

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