

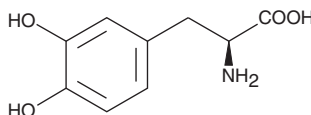
# Product Information



## L-DOPA

Catalog No. 13248

**CAS Registry No.:** 59-92-7  
**Formal Name:** 3-hydroxy-L-tyrosine  
**Synonyms:** 3,4-Dihydroxyphenylalanine, Levodopa, Pardopa, Syndopa  
**MF:** C<sub>9</sub>H<sub>11</sub>NO<sub>4</sub>  
**FW:** 197.2  
**Purity:** ≥95%  
**Stability:** ≥2 years at -20°C  
**Supplied as:** A crystalline solid



### Laboratory Procedures

For long term storage, we suggest that L-DOPA be stored as supplied at -20°C. It should be stable for at least two years.

L-DOPA is supplied as a crystalline solid. If aqueous stock solutions are required for biological experiments, they can best be prepared by diluting the organic solvent into aqueous buffers or isotonic saline. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Dopamine is a neurotransmitter involved in synaptic plasticity, cognition, and the regulation of locomotor control. It is produced endogenously in the substantia nigra and ventral tegmental area but when administered exogenously cannot cross the blood brain barrier. L-DOPA is a metabolic precursor of dopamine that is capable of crossing the blood brain barrier. It is produced from L-tyrosine by tyrosine hydroxylase and metabolized by catechol-O-methyl transferase (COMT). In the brain L-DOPA is converted to dopamine. It is conventionally used to increase dopamine concentrations in the brain as a treatment for Parkinson's disease and stroke recovery.<sup>1</sup> However L-DOPA has a short half-life and is known to elevate homocysteine concentrations in plasma, which can be neurotoxic and induce oxidative damage.<sup>2</sup>

### References

- Berends, H.I., Nijlant, J.M.M., Movig, K.L.L., *et al.* The clinical use of drugs influencing neurotransmitters in the brain to promote motor recovery after stroke; a Cochrane systematic review. *Eur J Phys Rehabil Med* **45**(4), 621-630 (2009).
- Müller, T. Possible treatment concepts for the levodopa-related hyperhomocysteinemia. *Cardiovascular Psychiatry and Neurology* **2009**, (2009).

### Related Products

Dopamine β-hydroxylase (N-Term; human) Polyclonal Antibody - Cat. No. 10009371 • Dopamine Transporter (C-Term) Polyclonal Antibody - Cat. No. 10009372 • Dopamine Transporter (Extracellular Loop 2) Polyclonal Antibody - Cat. No. 10009373 • Tyrosine Hydroxylase (Phospho-Ser<sup>19</sup>) Polyclonal Antibody - Cat. No. 10009412 • Tyrosine Hydroxylase (Phospho-Ser<sup>31</sup>) Polyclonal Antibody - Cat. No. 10009413 • Tyrosine Hydroxylase (Phospho-Ser<sup>40</sup>) Polyclonal Antibody - Cat. No. 10009414

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**WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY; NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.**

#### MATERIAL SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Material Safety Data Sheet, which has been sent via email to your institution.

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Cayman Chemical Company makes **no warranty or guarantee** of any kind, whether written or oral, expressed or implied, including without limitation, any warranty of fitness for a particular purpose, suitability and merchantability, which extends beyond the description of the chemicals hereof. Cayman warrants only to the original customer that the material will meet our specifications at the time of delivery.

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