

PRODUCT INFORMATION



4-Hydroxyphenylpyruvic Acid

Item No. 38508

CAS Registry No.: 156-39-8

Formal Name: 4-hydroxy- α -oxo-benzenepropanoic acid

Synonyms: HPPA, 3-(4-Hydroxyphenyl)pyruvic Acid, *p*-4-Hydroxyphenylpyruvic Acid, *para*-4-Hydroxyphenylpyruvic Acid, NSC 100738, NSC 666757

MF: $C_9H_8O_4$

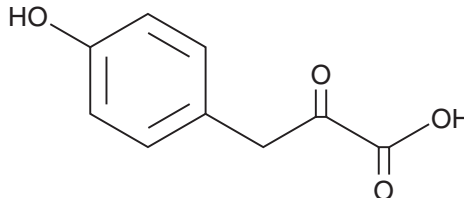
FW: 180.2

Purity: $\geq 95\%$

Supplied as: A solid

Storage: -20°C

Stability: ≥ 4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

4-Hydroxyphenylpyruvic acid (4-HPPA) is supplied as a solid. A stock solution may be made by dissolving the 4-HPPA in the solvent of choice, which should be purged with an inert gas. 4-HPPA is soluble in acetonitrile and methanol.

Description

4-HPPA is an intermediate in the metabolism of aromatic amino acids, including the conditionally essential amino acid L-tyrosine (Item No. 36333) and essential amino acid L-phenylalanine (Item No. 31498).^{1,2} It is formed from L-tyrosine by tyrosine transaminase and is converted to homogentisic acid (Item No. 20045) by 4-hydroxyphenylpyruvate dioxygenase. 4-HPPA inhibits LPS-induced IL-6 and nitric oxide (NO) production in RAW 264.7 macrophages (IC_{50} s = 2 and 0.5 mM, respectively).³ It decreases serum starvation-induced mitochondrial superoxide production in EA.hy926 endothelial cells *in vitro* and increases survival in a rat model of hemorrhagic shock.¹ Serum and urinary levels of 4-HPPA are increased in patients with alkaptonuria, an inborn error of metabolism characterized by a deficiency of 4-hydroxyphenylpyruvate dioxygenase, osteoarthropathy, and cardiac valve disease.²

References

1. Cotoia, A., Scrima, R., Gefter, J.V., *et al.* *p*-Hydroxyphenylpyruvate, an intermediate of the Phe/Tyr catabolism, improves mitochondrial oxidative metabolism under stressing conditions and prolongs survival in rats subjected to profound hemorrhagic shock. *PLoS One* **9**(3), e90917 (2014).
2. Norman, B.P., Davison, A.S., Hickton, B., *et al.* Comprehensive biotransformation analysis of phenylalanine-tyrosine metabolism reveals alternative routes of metabolite clearance in nitisinone-treated alkaptonuria. *Metabolites* **12**(10), 927 (2022).
3. Scrima, R., Menga, M., Pacelli, C., *et al.* Para-hydroxyphenylpyruvate inhibits the pro-inflammatory stimulation of macrophage preventing LPS-mediated nitro-oxidative unbalance and immunometabolic shift. *PLoS One* **12**(11), e0188683 (2017).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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