

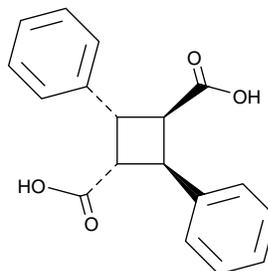
Product Information



α -Truxillic Acid

Item No. 14865

CAS Registry No.:	490-20-0
Formal Name:	(1 α ,2 α ,3 β ,4 β)-2,4-diphenyl-1,3-cyclobutanedicarboxylic acid
Synonym:	Gratissimic acid
MF:	C ₁₈ H ₁₆ O ₄
FW:	296.3
Purity:	≥98%
Stability:	≥2 years at -20°C
Supplied as:	A crystalline solid
UV/Vis.:	λ_{max} : 259 nm



Laboratory Procedures

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

α -Truxillic acid is supplied as a crystalline solid. A stock solution may be made by dissolving the α -truxillic acid in the solvent of choice. α -Truxillic acid is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of α -truxillic acid in these solvents is approximately 20 and 16 mg/ml, respectively.

α -Truxillic acid is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, α -truxillic acid should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. α -Truxillic acid has a solubility of approximately 0.07 mg/ml in a 1:12 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

α -Truxillic acid can be formed by the dimerization of two molecules of α -*trans*-cinnamic acid.¹ It is related to incarvillateine, a natural antinociceptive compound derived from the Asian herb *I. sinensis*.² α -Truxillic acid and some of its derivatives significantly block inflammatory pain while having little effect on neurogenic pain, as indicated by the formalin test in mice.²⁻³ Related compounds, like SB-FI-26 (Item No. 14191), bind fatty acid binding protein 5 (FABP5).⁴ This may be related to pain suppression, since FABP5 acts as a transporter of the endocannabinoid anandamide.⁵ While certain derivatives of α -truxillic acid can directly activate peroxisome proliferator-activated receptor γ , α -truxillic acid has no such activity.⁶

References

1. Benedict, J.B. and Coppens, P. Kinetics of the single-crystal to single-crystal two-photon photodimerization of α -*trans*-cinnamic acid to α -truxillic acid. *J. Phys. Chem. A* **113**(13), 3116-3120 (2009).
2. Chi, Y.-M., Nakamura, M., Yoshizawa, T., *et al.* Anti-inflammatory activities of α -truxillic acid derivatives and their monomer components. *Biol. Pharm. Bull.* **28**(9), 1776-1778 (2005).
3. Chi, Y.-M., Nakamura, M., Zhao, X.-Y., *et al.* Antinociceptive activities of α -truxillic acid and β -truxillic acid derivatives. *Biol. Pharm. Bull.* **29**(3), 580-584 (2006).
4. Berger, W.T., Ralph, B.P., Kaczocha, M., *et al.* Targeting fatty acid binding protein (FABP) anandamide transporters - a novel strategy for development of anti-inflammatory and anti-nociceptive drugs. *PLoS One* **7**(12), (2012).
5. Kaczocha, M., Glaser, S.T., and Deutsch, D.G. Identification of intracellular carriers for the endocannabinoid anandamide. *Proc. Natl. Acad. Sci. USA* **106**(15), 6375-6380 (2009).
6. Steri, R., Rupp, M., Proschak, E., *et al.* Truxillic acid derivatives act as peroxisome proliferator-activated receptor γ activators. *Bioorg. Med. Chem. Lett.* **20**(9), 2920-2923 (2010).

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