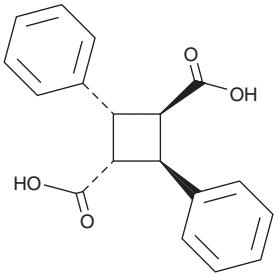
PRODUCT INFORMATION

α-Truxillic Acid

Item No. 14865

CAS Registry No.:	490-20-0
Formal Name:	(1α,2α,3β,4β)-2,4-diphenyl-1,3-cyclobutanedicarboxylic acid
Synonym:	Gratissimic Acid
MF:	$C_{18}H_{16}O_4$
FW:	296.3
Purity:	≥98%
UV/Vis.:	λ_{max}: 259 nm
Supplied as:	A crystalline 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

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.

Description

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

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2. Chi, Y.-M., Nakamura, M., Yoshizawa, T., *et al. Biol. Pharm. Bull.* **28(9)**, 1776-1778 (2005).
3. Chi, Y.-M., Nakamura, M., Zhao, X.-Y., *et al. Biol. Pharm. Bull.* **29(3)**, 580-584 (2006).
4. Berger, W.T., Ralph, B.P., Kaczocha, M., *et al. PLoS One* **7(12)**, (2012).
5. Kaczocha, M., Glaser, S.T., and Deutsch, D.G. *Proc. Natl. Acad. Sci. USA* **106(15)**, 6375-6380 (2009).
6. Steri, R., Rupp, M., Proschak, E., *et al. Bioorg. Med. Chem. Lett.* **20(9)**, 2920-2923 (2010).

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