

Product Data Sheet

Product Name: Withanone

Cat. No.: GC48969

Chemical Properties

Cas. No. 27570-38-3

SMILES O=C(C(C)=C(C)C1O[C@@]1([H])[C@@H](C)[C@@]2(O)CC[C@@]3([H])[C@]4([H])[C@H]5[C@H](O5)[C@@]([C@@]6(C)[C@@]4([H])CC[C@@]32C)(O)CC=CC6=O

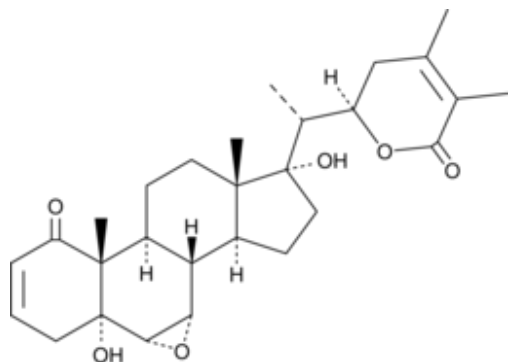
Formula C₂₈H₃₈ M.Wt 470.6

Solubility Chloroform: soluble, Ethyl Acetate: slightly soluble, Methanol: slightly soluble
Storage -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure



Background

Withanone is a phytochemical that has been found in *W. somnifera* and has diverse biological activities.^{1,2,3} It inhibits the protein-protein interaction between human angiotensin-converting enzyme 2 (ACE2) and the SARS-CoV-2 spike protein receptor-binding domain (IC₅₀ = 0.33 ng/ml).¹ Withanone (10 µg/ml) protects against DNA damage, oxidative stress, and premature senescence induced by the industrial contaminant methoxyacetic acid in TIG-1 human fibroblasts.² *In vivo*, withanone (5-20 mg/kg) decreases brain levels of amyloid-β 1-42 (Aβ₄₂), malondialdehyde (MDA),

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

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TNF- α , IL-1 β , and IL-6, increases brain levels of acetylcholine, and improves cognitive function in a rat model of streptozotocin-induced sporadic Alzheimer's disease.³

1. Balkrishna, A., Pokhrel, S., Singh, H., et al. Withanone from *Withania somnifera* attenuates SARS-CoV-2 RBD and host ACE2 interactions to rescue spike protein induced pathologies in humanized zebrafish model. *Drug Des. Devel. Ther.* 15:1111-1133(2021) 2. Priyandoko, D., Ishii, T., Kaul, S.C., et al. Ashwagandha leaf derived withanone protects normal human cells against the toxicity of methoxyacetic acid, a major industrial metabolite. *PLoS One* 6(5):e19552(2011) 3. Pandey, A., Bani, S., Dutt, P., et al. Multifunctional neuroprotective effect of withanone, a compound from *Withania somnifera* roots in alleviating cognitive dysfunction. *Cytokine* 102:211-221(2018)

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