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PRODUCT INFORMATION



Chebulagic Acid

Item No. 25203

CAS Registry No.: 23094-71-5
Formal Name: β -D-glucopyranose, cyclic 3,6-[(1R)-4,4',5,5',6,6'-hexahydroxy[1,1'-biphenyl]-2,2'-dicarboxylate] 1-(3,4,5-trihydroxybenzoate), cyclic 2 \rightarrow 2:4 \rightarrow 1-ester with (2S)-2-[(3S,4S)-5-carboxy-3,4-dihydro-3,7,8-trihydroxy-2-oxo-2H-1-benzopyran-4-yl]butanedioic acid

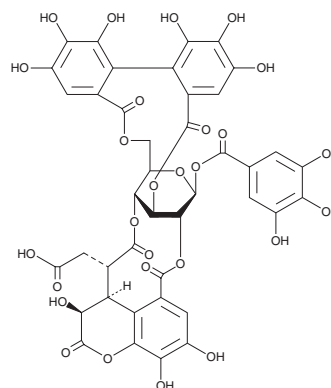
MF: C₄₁H₃₀O₂₇
FW: 954.7
Purity: \geq 98%
UV/Vis.: λ_{max} : 226, 278 nm

Supplied as: A crystalline solid

Storage: -20°C

Stability: \geq 4 years

Item Origin: Plant/*Chebulae Fructus*



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

Laboratory Procedures

Chebulagic acid is supplied as a crystalline solid. A stock solution may be made by dissolving the chebulagic acid in the solvent of choice, which should be purged with an inert gas. Chebulagic acid is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of chebulagic acid in ethanol is approximately 5 mg/ml and approximately 20 mg/ml in DMSO and DMF.

Chebulagic acid is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, chebulagic acid should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Chebulagic acid has a solubility of approximately 0.25 mg/ml in a 1:3 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Chebulagic acid is a polyphenol and tannin that has been found in *T. chebula* and has diverse biological activities.¹⁻⁵ It is an inhibitor of COX-1, COX-2, and 5-lipoxygenase (5-LO; IC₅₀s = 15, 0.92, and 2.1 μ M, respectively) as well as α -glucosidase and 15-LO (IC₅₀s = 0.05 and 24.9 μ M, respectively).^{1,2} Chebulagic acid inhibits LPS-induced increases in inducible nitric oxide synthase (iNOS), COX-1, COX-2, and 5-LO protein levels, production of NO, prostaglandin E₂ (PGE₂), and reactive oxygen species (ROS), and nuclear translocation of NF- κ B in RAW 264.7 macrophages in a concentration-dependent manner.³ It inhibits the growth of HCT15, COLO 205, MDA-MB-231, DU145, and K562 cancer cells (GI₅₀s = 20.3, 18, 26.2, 28.54, and 30.66 μ M, respectively).¹ Chebulagic acid increases insulin-stimulated glucose uptake in 3T3-L1 adipocytes by 10.2-, 13.8-, and 16.6-fold when used at concentrations of 10, 50, and 100 μ M, respectively.⁴ It also scavenges 2,2-diphenyl-1-picrylhydrazyl (DPPH) radicals (IC₅₀ = 1.4 μ M) and exhibits antiviral activity against cytomegalovirus, hepatitis C virus, dengue virus, measles virus, and respiratory syncytial virus *in vitro* (EC₅₀s = 25.5, 12.16, 13.11, 34.42, and 0.38 μ M, respectively).^{1,5}

References

1. Reddy, D.B., Reddy, T.C., Jyotsna, G., et al. *J. Ethnopharmacol.* **124**(3), 506-512 (2009).
2. Pham, A.T., Malterud, K.E., Paulsen, B.S., et al. *Pharm. Biol.* **52**(9), 1166-1169 (2014).
3. Reddy, D.B. and Reddanna, P. *Biochem. Biophys. Res. Commun.* **381**(1), 112-117 (2009).
4. Shyni, G.L., Kavitha, S., Indu, S., et al. *Biofactors* **40**(6), 646-657 (2014).
5. Lin, L.T., Chen, T.Y., Lin, S.C., et al. *BMC Microbiol.* **13**, 187 (2013).

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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