

Product Data Sheet

Product Name: Neochlorogenic acid methyl ester

Cat. No.: GF05704

Chemical Properties

Cas. No. 123410-65-1

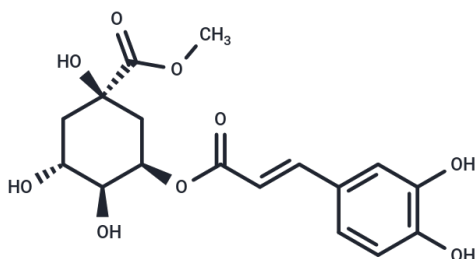
Formula $C_{17}H_{20}O_9$ M.Wt 368.34

Solubility DMSO: 55 mg/mL (149.32 mM) Storage 2-8°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



Protocol

Cell experiment [1]:

Cell lines HepG 2.2.15 cell line

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

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HepG 2.2.15 cells were cultured in RPMI-1640 medium supplemented with 10% foetal calf serum, 100mg/mL G148, 100 IU/mL penicillin, 100IU/mL streptomycin, and maintained at 37°C in a moist atmosphere containing 5% CO₂. Anti-HBV procedure was carried according to previous report. The anti-HBV antigen secretion activities and cytotoxicity were assayed by ELISA and a modified MTT method, inhibition of HBV DNA replication was monitored by the real-time quantitative PCR method. Neochlorogenic acid methyl ester(144.7, 312.5, 2488.4, 2916.2nM; 72h) were dissolved in DMSO (solvent control) for anti-HBV activity and cytotoxicity assay. The final concentration of DMSO in the culture did not exceed 2.5µL/mL and did not affect the growth of cells.

Preparation Method

Reaction Conditions 144.7, 312.5, 2488.4, 2916.2nM; 72h

Applications Neochlorogenic acid methyl ester dramatically decreased the activity against HBV DNA replication, reduced secretions of HBsAg and HBeAg without cellular toxicity.

References:

[1] Zhao Y, Geng CA, Ma YB, Huang XY, Chen H, Cao TW, He K, Wang H, Zhang XM, Chen JJ. UFLC/MS-IT-TOF guided isolation of anti-HBV active chlorogenic acid analogues from *Artemisia capillaris* as a traditional Chinese herb for the treatment of hepatitis. J Ethnopharmacol. 2014 Oct 28;156:147-54.

Background

Neochlorogenic acid methyl ester is a compound with anti-HBV activity^[1]. Neochlorogenic acid methyl ester can be isolated from the fruit of *wild eggplant* and the stem of *Akebia trifoliata*^{[2][3]}. In addition, Neochlorogenic acid methyl ester also demonstrated antioxidant activity and quinone reductase activity, with the concentration inducing quinone reductase activity being 6.7µM^[4].

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Neochlorogenic acid methyl ester is usually used in anti-HBV and antioxidant related research^[5-7].

In vitro, treatment of HepG 2.2.15 cells with Neochlorogenic acid methyl ester (144.7 μM) dramatically decreased the activity against HBV DNA replication, reduced secretions of HBsAg and HBeAg without cellular toxicity^[7].

References:

- [1] Ge, L., Wan, H., Tang, S., Chen, H., Li, J., Zhang, K., Zhou, B., Fei, J., Wu, S., & Zeng, X. (2018). Novel caffeoylquinic acid derivatives from *Lonicera japonica* Thunb. flower buds exert pronounced anti-HBV activities. *RSC advances*, 8(62), 35374–35385.
- [2] Ma, C., Whitaker, B. D., & Kennelly, E. J. (2010). New 5-O-caffeoylquinic acid derivatives in fruit of the wild eggplant relative *Solanum viarum*. *Journal of agricultural and food chemistry*, 58(20), 11036–11042.
- [3] Wang, J., Xu, Q. L., Zhou, Z. Y., & Tan, J. W. (2014). [Caffeoylquinic acid derivatives from stems of *Akebia trifoliata*]. *Journal of Chinese medicinal materials*, 37(7), 1190–1193.
- [4] Li, J., Deng, Y., Yuan, C., Pan, L., Chai, H., Keller, W. J., & Kinghorn, A. D. (2012). Antioxidant and quinone reductase-inducing constituents of black chokeberry (*Aronia melanocarpa*) fruits. *Journal of agricultural and food chemistry*, 60(46), 11551–11559.
- [5] Retamozo MH, Silva CC, Tamayose CI, Carvalho JCS, Romoff P, Fávero OA, Ferreira MJP. Chemical Constituents from Leaves of *Baccharis sphenophylla* (Asteraceae) and Their Antioxidant Effects. *Plants (Basel)*. 2023 Mar 10;12(6):1262. doi: 10.3390/plants12061262.
- [6] Kim WR, Kim EO, Kang K, Oidovsambuu S, Jung SH, Kim BS, Nho CW, Um BH. Antioxidant activity of phenolics in leaves of three red pepper (*Capsicum annuum*) cultivars. *J Agric Food Chem*. 2014 Jan 29;62(4):850-9.
- [7] Zhao Y, Geng CA, Ma YB, Huang XY, Chen H, Cao TW, He K, Wang H, Zhang XM, Chen JJ. UFLC/MS-IT-TOF guided isolation of anti-HBV active chlorogenic acid analogues from *Artemisia capillaris* as a traditional Chinese herb for the treatment of hepatitis. *J Ethnopharmacol*. 2014 Oct 28;156:147-54.

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