

4-methoxylonchocarpin

Chemical Properties

CAS No. : 51589-67-4

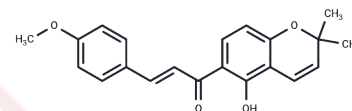
Formula: C₂₁H₂₀O₄

Molecular Weight: 336.38

Store at low temperature

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.



Biological Description

Description	4-methoxylonchocarpin was isolated from the roots of <i>Abrus precatorius</i> as a potent anti-inflammatory compound. 4-methoxylonchocarpin inhibited NF-κB-activated TNF expression by inhibiting the binding of LPS to TLR4 in macrophages and suppressed TNBS-induced colitis in mice.
Targets(IC50)	NF-κB, Interleukin, TLR, TNF
In vitro	The roots of <i>Abrus precatorius</i> (AP, Fabaceae) have traditionally been used in Vietnam and China for the treatment of inflammatory diseases such as stomatitis, asthma, bronchitis, and hepatitis. In this study, we isolated 4-methoxylonchocarpin (ML). In lipopolysaccharide (LPS)-stimulated macrophages, ML was found to inhibit nuclear factor (NF)-κB activation and tumor necrosis factor (TNF) and interleukin (IL)-6 expression by inhibiting LPS binding to Toll-like receptor 4 (TLR4) in vitro.[1]
In vivo	Oral administration of 4-methoxylonchocarpin (ML) in mice with TNBS-induced colitis suppressed colon shortening and colonic myeloperoxidase activity. ML treatment significantly inhibited the activation of nuclear factor (NF)-κB and phosphorylation of transforming growth factor β-activated kinase 1 in the colon. Treatment with ML also inhibited TNBS-induced expression of IL-1β, IL-17A, and TNF. While ML reduced the TNBS-induced expression of M1 macrophage markers such as arginase-2 and TNF, it was found to increase the expression of M2 macrophage markers such as arginase-1 and IL-10. In conclusion, oral administration of ML attenuated colitis in mice by inhibiting the binding of LPS to TLR4 on immune cells and increasing the polarization of M1 macrophages to M2 macrophages.[1]

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.9728 mL	14.8641 mL	29.7283 mL
5 mM	0.5946 mL	2.9728 mL	5.9457 mL
10 mM	0.2973 mL	1.4864 mL	2.9728 mL
50 mM	0.0595 mL	0.2973 mL	0.5946 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

- Jang HM, et al. 4-Methoxylonchocarpin attenuates inflammation by inhibiting lipopolysaccharide binding to Toll-like receptor of macrophages and M1 macrophage polarization. *Int Immunopharmacol.* 2017;45:90-97.
- Li J, Kang Z, et al. Potent insecticidal activity of *Eleocharis dulcis* (Burm. f.) Trin peel extract and its main components against aphids. *Pest Manag Sci.* 2023;79(4):1295-1304.
- Ngadjui BT, et al. Prenylated flavonoids from the aerial parts of *Dorstenia mannii*. *Phytochemistry.* 2000;55(8):915-919.
- Hussain H, et al. 4-Benzyloxylonchocarpin and Muracatanes A-C from *Ranunculus muricatus* L. and Their Biological Effects. *Biomolecules.* 2020;10(11):1562.

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