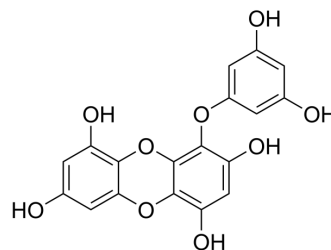


Eckol

| | |
|---------------------------|---|
| Cat. No.: | HY-114203 |
| CAS No.: | 88798-74-7 |
| Molecular Formula: | C ₁₈ H ₁₂ O ₉ |
| Molecular Weight: | 372.28 |
| Target: | Monoamine Oxidase; Influenza Virus |
| Pathway: | Neuronal Signaling; Anti-infection |
| Storage: | Please store the product under the recommended conditions in the Certificate of Analysis. |



BIOLOGICAL ACTIVITY

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|-------------------------------------|---|--|-------------------------------------|------------|---|----------------|----------------------|------------------|-----|---------|---|
| Description | Eckol is a potent hMAO-A (Mixed) and hMAO-B (non-competitive) inhibitor with IC ₅₀ s of 7.20 and 83.44 μM, respectively. Eckol shows stimulatory effects in maize and can be used as a plant biostimulant. Eckol also shows antiallergic and antiviral effects ^{[1][2][3][4]} . | | | | | | | | | | |
| IC₅₀ & Target | hMAO-A 7.20 μM (IC ₅₀) | hMAO-B 83.44 μM (IC ₅₀) | H1N1 89.5 μM (IC ₅₀) | | | | | | | | |
| In Vitro | <p>Pretreatment with Eckol (25-100 μg/mL; 2 h) significantly reduces β-hexosaminidase release in IgE/BSA-stimulated BMCMC in a dose-dependent manner^[3].</p> <p>Eckol (25-100 μg/mL; 1 h) inhibits the production of Th2-type cytokines, such as IL-4, IL-5, and IL-13 as well as proinflammatory cytokines, such as IL-6^[3].</p> <p>Eckol (25-100 μg/mL) attenuates cytokine mRNA levels such as IL-1β, IL-4, IL-5, IL-6, IL-13, IFN-γ, and TNF-α in IgE/BSA-stimulated BMCMC^[3].</p> <p>Eckol (25-100 μg/mL; 1 h) inhibits NF-κB activation in IgE/BSA-stimulated BMCMC^[3].</p> <p>Eckol shows a moderate IC₅₀ value (89.5 μM) against the influenza A/Bervig-Mission/1/18 (H1N1) virus^[4].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Western Blot Analysis^[3]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>Bone marrow-derived cultured mast cells (BMCMC)</td> </tr> <tr> <td>Concentration:</td> <td>25, 50 and 100 μg/mL</td> </tr> <tr> <td>Incubation Time:</td> <td>1 h</td> </tr> <tr> <td>Result:</td> <td>Inhibited the degradation of IκB-α within the cytosol and the translocation of the NF-κB/p65 subunit into the nucleus that were induced by IgE/BSA.</td> </tr> </table> | | | Cell Line: | Bone marrow-derived cultured mast cells (BMCMC) | Concentration: | 25, 50 and 100 μg/mL | Incubation Time: | 1 h | Result: | Inhibited the degradation of IκB-α within the cytosol and the translocation of the NF-κB/p65 subunit into the nucleus that were induced by IgE/BSA. |
| Cell Line: | Bone marrow-derived cultured mast cells (BMCMC) | | | | | | | | | | |
| Concentration: | 25, 50 and 100 μg/mL | | | | | | | | | | |
| Incubation Time: | 1 h | | | | | | | | | | |
| Result: | Inhibited the degradation of IκB-α within the cytosol and the translocation of the NF-κB/p65 subunit into the nucleus that were induced by IgE/BSA. | | | | | | | | | | |
| In Vivo | <p>Foliar application of Eckol (1 μM) significantly enhanced shoot and root length, shoot and root fresh and dry weight, leaf area and leaf number^[2].</p> <p>Eckol (50 or 100 μg/mouse; intradermal; once) reduces allergic inflammatory responses in the passive cutaneous anaphylaxis (PCA)-induced mice^[3].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> | | | | | | | | | | |

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|-----------------|--|
| Animal Model: | BALB/c mice (8 weeks old), IgE/BSA-induced passive cutaneous anaphylaxis (PCA) model [3] |
| Dosage: | 50 or 100 µg/mouse |
| Administration: | Intradermal injection, applied on mice ear 2 h prior to anaphylaxis induction |
| Result: | Reduced allergic inflammatory responses. |

REFERENCES

- [1]. Jung HA, et al. Evaluation of the inhibitory effects of eckol and dieckol isolated from edible brown alga *Eisenia bicyclis* on human monoamine oxidases A and B. *Arch Pharm Res.* 2017 Apr;40(4):480-491.
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- [3]. Han EJ, et al. Eckol from *Ecklonia cava* Suppresses Immunoglobulin E-mediated Mast Cell Activation and Passive Cutaneous Anaphylaxis in Mice. *Nutrients.* 2020 May 9;12(5):1361.
- [4]. Besednova NN, et al. Antiviral Effects of Polyphenols from Marine Algae. *Biomedicines.* 2021 Feb 17;9(2):200.

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

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