

Pectic acid

Cat. No.:	HY-N10520
CAS No.:	9046-40-6
Target:	Apoptosis; Necroptosis; Endogenous Metabolite
Pathway:	Apoptosis; Metabolic Enzyme/Protease
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.

Pectic acid

BIOLOGICAL ACTIVITY

Description	Pectic acid (Methyl protopectin), a polygalacturonic acid, induces cell apoptosis and necrosis in pituitary tumor cells. Pectic acid can be used in the research of cancers and autoimmune disease ^{[2][3]} .									
IC₅₀ & Target	Human Endogenous Metabolite									
In Vitro	<p>Pectic acid (2.5-100 µg/mL, 30 min) stimulates the release of prolactin (PRL) in GH3/B6 cells, without affecting the viability of cells^[1].</p> <p>Pectic acid (100 µg/mL-5 mg/mL, 6-48 h) increases cell death and DNA damage in GH3/B6 cells, detected by MTT assay and AO/EB staining^[2].</p> <p>Pectic acid (100 µg/mL-1 mg/mL, 24 h) induces apoptosis in GH3/B6 cells in a dose-dependent manner^[2].</p> <p>Pectic acid (2.5-5 mg/mL, 24 h) induces necrosis in GH3/B6 cells, confirmed by PI staining^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Cell Cycle Analysis^[2]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>GH3/B6 cells</td> </tr> <tr> <td>Concentration:</td> <td>1 mg/mL</td> </tr> <tr> <td>Incubation Time:</td> <td>24 h</td> </tr> <tr> <td>Result:</td> <td>Induced sub G1 events, and DNA fragmentation, which was correlated with the number of the apoptotic cells.</td> </tr> </table>		Cell Line:	GH3/B6 cells	Concentration:	1 mg/mL	Incubation Time:	24 h	Result:	Induced sub G1 events, and DNA fragmentation, which was correlated with the number of the apoptotic cells.
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In Vivo	<p>Pectic acid (25 and 100 mg/kg, oral gavage) increases colon length, downregulates disease activity index, histopathological score and proinflammatory cytokine levels in Ulcerative colitis (UC) mice^[3].</p> <p>Pectic acid (6.25 and 12.5 mg/kg, intravenous injection) rescues the reduction in colon length in UC mice^[3].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table border="1"> <tr> <td>Animal Model:</td> <td>Ulcerative colitis (UC) mice^[3]</td> </tr> <tr> <td>Dosage:</td> <td>25, 100 mg/kg</td> </tr> <tr> <td>Administration:</td> <td>Oral gavage</td> </tr> </table>		Animal Model:	Ulcerative colitis (UC) mice ^[3]	Dosage:	25, 100 mg/kg	Administration:	Oral gavage		
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Result:	Exhibited the longest colon, lowest DAI, and minimum histopathological score. Decreased the proinflammatory cytokines in the colonic tissue of UC mice.
Animal Model:	Ulcerative colitis (UC) mice ^[3]
Dosage:	6.25, 12.5 mg/kg
Administration:	Intravenous injection
Result:	Decreased the spleen and thymus index. Restored the Th17/Treg balance in the spleen and lamina propria of UC mice. Improved the gut microbiota composition.

REFERENCES

- [1]. Delaram Eslimi, et al. Pectic acid effects on prolactin secretion in GH3/B6 rat pituitary cell line. Iran Biomed J. 2008 Jul;12(3):167-72.
- [2]. Farnoosh Attari, et al. Apoptotic and necrotic effects of pectic acid on rat pituitary GH3/B6 tumor cells. Iran Biomed J. 2009 Oct;13(4):229-36.
- [3]. Jie Song, et al. Effects of oral administration and intravenous injection of polygalacturonic acid on the immunomodulation and gut microbiota in UC mice. Int J Biol Macromol. 2022 Sep 30;217:150-160.

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

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