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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.

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].

IC_{50} & Target

Human Endogenous Metabolite

In Vitro

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].

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].

Pectic acid (100 μg/mL-1 mg/mL, 24 h) induces apoptosis in GH3/B6 cells in a dose-dependent manner[2].

Pectic acid (2.5-5 mg/mL, 24 h) induces necrosis in GH3/B6 cells, confirmed by PI staining[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Cycle Analysis[2]

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.

In Vivo

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].

Pectic acid (6.25 and 12.5 mg/kg, intravenous injection) rescues the reduction in colon length in UC mice[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Ulcerative colitis (UC) mice[3]
Dosage:	25, 100 mg/kg
Administration:	Oral gavage

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.

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