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## Phytohemagglutinin

Cat. No.:	HY-N7038
CAS No.:	9008-97-3
Target:	Others
Pathway:	Others
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)

## Phytohemagglutinin

### SOLVENT & SOLUBILITY

In Vitro	H <sub>2</sub> O : 20 mg/mL (Need ultrasonic) DMSO : < 1 mg/mL (ultrasonic;warming;heat to 60°C) (insoluble or slightly soluble)
In Vivo	1. Add each solvent one by one: PBS Solubility: 50 mg/mL (Infinity mM); Clear solution; Need ultrasonic

### BIOLOGICAL ACTIVITY

Description	Phytohemagglutinin (PHA-M), the major seed lectin of the common bean, Phaseolus vulgaris, accumulates in the parenchyma cells of the cotyledons. Phytohemagglutinin is a T-cell activator. Stimulation of human mononuclear leukocytes by Phytohemagglutinin induces the expression of ChAT mRNA, and potentiated ACh synthesis <sup>[1]</sup> .								
IC <sub>50</sub> & Target	Apoptosis <sup>[1]</sup>								
In Vitro	Phytohemagglutinin (PHA-M) binds to the membranes of T-cells, stimulates metabolic activity, cell division, and involves inflammatory pathways <sup>[3]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only. Apoptosis Analysis <sup>[1]</sup> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Cell Line:</td> <td>A20 (mouse B cell lymphoma, TLB-208), BW5147.3 (mouse T cell lymphoma, TIB-47), EL4 (mouse T cell lymphoma, TIB-39)<sup>[1]</sup></td> </tr> <tr> <td>Concentration:</td> <td>20 µg/ml</td> </tr> <tr> <td>Incubation Time:</td> <td>20-48 hours</td> </tr> <tr> <td>Result:</td> <td>Enhanced apoptosis in A20, BW5147.3 and EL4 cells.</td> </tr> </table>	Cell Line:	A20 (mouse B cell lymphoma, TLB-208), BW5147.3 (mouse T cell lymphoma, TIB-47), EL4 (mouse T cell lymphoma, TIB-39) <sup>[1]</sup>	Concentration:	20 µg/ml	Incubation Time:	20-48 hours	Result:	Enhanced apoptosis in A20, BW5147.3 and EL4 cells.
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Concentration:	20 µg/ml								
Incubation Time:	20-48 hours								
Result:	Enhanced apoptosis in A20, BW5147.3 and EL4 cells.								
In Vivo	Phytohemagglutinin (100 µg; i.p.; daily for 2 days) inhibits A20 tumor growth <sup>[1]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.								

Animal Model:	CB17-SCID Mice (bearing A20 cells) <sup>[1]</sup>
Dosage:	100 µg
Administration:	I.p.; daily for 2 days
Result:	Inhibited A20 tumor growth.

## CUSTOMER VALIDATION

- J Ethnopharmacol. 2022 Feb 18;115126.
- Dis Markers. 2021 Oct 15;2021:5838582.

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## REFERENCES

- [1]. Nagae M, et al. Phytohemagglutinin from Phaseolus vulgaris (PHA-E) displays a novel glycan recognition mode using a common legume lectin fold. Glycobiology. 2014;24(4):368-378.
- [2]. Fujii T, et al. Induction of choline acetyltransferase mRNA in human mononuclear leukocytes stimulated by phytohemagglutinin, a T-cell activator. J Neuroimmunol. 1998;82(1):101-107.
- [3]. Movafagh A, et al. The Significance Application of Indigenous Phytohemagglutinin (PHA) Mitogen on Metaphase and Cell Culture Procedure. Iran J Pharm Res. 2011;10(4):895-903.

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

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