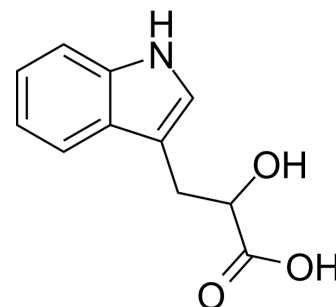


Indolelactic acid

Cat. No.:	HY-113099	
CAS No.:	1821-52-9	
Molecular Formula:	C ₁₁ H ₁₁ NO ₃	
Molecular Weight:	205.21	
Target:	Endogenous Metabolite	
Pathway:	Metabolic Enzyme/Protease	
Storage:	Powder	-20°C 3 years 4°C 2 years
	In solvent	-80°C 1 year -20°C 6 months



SOLVENT & SOLUBILITY

In Vitro	DMSO : 100 mg/mL (487.31 mM; Need ultrasonic)				
		Solvent Concentration	Mass 1 mg	5 mg	10 mg
	Preparing Stock Solutions	1 mM	4.8731 mL	24.3653 mL	48.7306 mL
		5 mM	0.9746 mL	4.8731 mL	9.7461 mL
10 mM		0.4873 mL	2.4365 mL	4.8731 mL	
Please refer to the solubility information to select the appropriate solvent.					
In Vivo	<ol style="list-style-type: none"> Add each solvent one by one: 0.5% CMC-Na/saline water Solubility: 20 mg/mL (97.46 mM); Clear solution; Need ultrasonic Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.08 mg/mL (10.14 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.08 mg/mL (10.14 mM); Clear solution Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 1.98 mg/mL (9.65 mM); Clear solution 				

BIOLOGICAL ACTIVITY

Description	Indolelactic acid (Indole-3-lactic acid) is a tryptophan (Trp) catabolite in <i>Azotobacter vinelandii</i> cultures. Indolelactic acid has anti-inflammation and potential anti-viral activity ^{[1][3][4]} .
IC₅₀ & Target	Human Endogenous Metabolite

In Vitro	<p>Indolelactic acid (1 mM, 5 days) upregulates CXCR3, granzyme B, and immunoregulatory galectin-1 in Th2 cells^[2].</p> <p>Indolelactic acid (0.1-10 mM, 1 h) significantly inhibits LPS-induced inflammation in RAW blue macrophages and Caco-2 cells^[3].</p> <p>Indolelactic acid (0.1-10 mM, 1 h) inhibits TNF-α induced inflammation in HT-29 cells^[3].</p> <p>Indolelactic acid (10 mM, 1 h) activates the AhR and downstream Nrf2 pathway in Caco-2 cells^[3].</p> <p>Indolelactic acid (5 μM, 24 h) enhances the IFIT2 and RSAD2 mRNA expression in H4 cells stimulated by IL-1β^[4].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>RT-PCR^[3]</p>								
	<table border="1"> <tr> <td>Cell Line:</td> <td>HT-29 cells</td> </tr> <tr> <td>Concentration:</td> <td>0.1, 1, 10 mM</td> </tr> <tr> <td>Incubation Time:</td> <td>1 h</td> </tr> <tr> <td>Result:</td> <td>Decreased IL-8 level induced by TNF-α, and increased β-defensin 2 and SERT level.</td> </tr> </table>	Cell Line:	HT-29 cells	Concentration:	0.1, 1, 10 mM	Incubation Time:	1 h	Result:	Decreased IL-8 level induced by TNF- α , and increased β -defensin 2 and SERT level.
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	Concentration:	0.1, 1, 10 mM							
	Incubation Time:	1 h							
Result:	Decreased IL-8 level induced by TNF- α , and increased β -defensin 2 and SERT level.								
In Vivo	<p>Indolelactic acid (gavage feeding, 10 μM, 5 μL, 5 days, C57BL/6 mice) benefits the immature intestine preferentially^[4].</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>C57BL/6 mice^[4]</td> </tr> <tr> <td>Dosage:</td> <td>10 μM, 5 μL</td> </tr> <tr> <td>Administration:</td> <td>Gavage feeding, 5 days</td> </tr> <tr> <td>Result:</td> <td>Upregulated the innate immune response genes in immature mouse intestine (C57-pup-ileum), with no effects on pup-colon or adult intestine.</td> </tr> </table>	Animal Model:	C57BL/6 mice ^[4]	Dosage:	10 μ M, 5 μ L	Administration:	Gavage feeding, 5 days	Result:	Upregulated the innate immune response genes in immature mouse intestine (C57-pup-ileum), with no effects on pup-colon or adult intestine.
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CUSTOMER VALIDATION

- Amino Acids. 2022 Jul 15.
- Imeta. 2024 Jan 15.

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REFERENCES

- [1]. Bethany M Henrick, et al. Bifidobacteria-mediated immune system imprinting early in life. *Cell*. 2021 Jul 22;184(15):3884-3898.e11.
- [2]. Amy M Ehrlich, et al. Indole-3-lactic acid associated with Bifidobacterium-dominated microbiota significantly decreases inflammation in intestinal epithelial cells. *BMC Microbiol*. 2020 Nov 23;20(1):357.
- [3]. Wuyang Huang, et al. The impact of indole-3-lactic acid on immature intestinal innate immunity and development: a transcriptomic analysis. *Sci Rep*. 2021 Apr 13;11(1):8088.
- [4]. Francisco García-Tabares, et al. Production of 3-indoleacetic acid and 3-indolelactic acid in *Azotobacter vinelandii* cultures supplemented with tryptophan. *Appl Microbiol Biotechnol*. 1987 Mar, 25 (6):502-506.

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