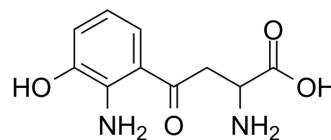


## 3-Hydroxykynurenine

Cat. No.:	HY-113294
CAS No.:	484-78-6
Molecular Formula:	C <sub>10</sub> H <sub>12</sub> N <sub>2</sub> O <sub>4</sub>
Molecular Weight:	224.21
Target:	Endogenous Metabolite; Apoptosis
Pathway:	Metabolic Enzyme/Protease; Apoptosis
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



### BIOLOGICAL ACTIVITY

<b>Description</b>	3-Hydroxykynurenine, a metabolite of tryptophan, is a potential endogenous neurotoxin whose increased levels have been described in several neurodegenerative disorders. 3-Hydroxykynurenine induces neuronal apoptosis <sup>[1]</sup> .									
<b>IC<sub>50</sub> &amp; Target</b>	Human Endogenous Metabolite									
<b>In Vitro</b>	<p>3-Hydroxykynurenine-induced neuronal cell death shows several features of apoptosis<sup>[1]</sup>.</p> <p>3-Hydroxykynurenine is a metabolic intermediate of the kynurenine pathway, the major metabolic pathway of tryptophan (Trp)<sup>[1]</sup>.</p> <p>3-Hydroxykynurenine acts as an endogenous neurotoxin in the brain under pathological conditions<sup>[1]</sup>.</p> <p>3-Hydroxykynurenine (20-100 μM) significantly inhibits CD4<sup>+</sup> T-cell proliferation in a dose-dependent manner with IC<sub>50</sub> of approximately 70 μM<sup>[2]</sup>.</p> <p>3-Hydroxykynurenine (20-100 μM) induces significant CD4<sup>+</sup> T-cell-mediated cell death in a dose-dependent manner<sup>[2]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Cell Proliferation Assay<sup>[2]</sup></p> <table border="1"> <tr> <td>Cell Line:</td> <td>CD3/CD28 bead-stimulated CD4<sup>+</sup> T cells</td> </tr> <tr> <td>Concentration:</td> <td>0, 20, 40, 60, 80, and 100 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>72 hours</td> </tr> <tr> <td>Result:</td> <td>Significantly inhibited CD4<sup>+</sup> T-cell proliferation in a dose-dependent manner with an IC<sub>50</sub> of approximately 70 μM.</td> </tr> </table>		Cell Line:	CD3/CD28 bead-stimulated CD4 <sup>+</sup> T cells	Concentration:	0, 20, 40, 60, 80, and 100 μM	Incubation Time:	72 hours	Result:	Significantly inhibited CD4 <sup>+</sup> T-cell proliferation in a dose-dependent manner with an IC <sub>50</sub> of approximately 70 μM.
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<b>In Vivo</b>	<p>3-Hydroxykynurenine administration (560 mg/kg IP on a daily basis on days 1 to 7, days 7 to 14, or days 1 to 14) results in significant prolongation of graft survival whether administered between days 1 to 7, days 7 to 14, or days 1 to 14<sup>[2]</sup>.</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>BALB/c (H2d) mice<sup>[2]</sup></td> </tr> <tr> <td>Dosage:</td> <td>560 mg/kg</td> </tr> <tr> <td>Administration:</td> <td>IP injection</td> </tr> </table>		Animal Model:	BALB/c (H2d) mice <sup>[2]</sup>	Dosage:	560 mg/kg	Administration:	IP injection		
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Result:	There was significant prolongation of graft survival in all treatment groups in comparison to the controls.
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## REFERENCES

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[1]. S Okuda, et al. 3-Hydroxykynurenine, an endogenous oxidative stress generator, causes neuronal cell death with apoptotic features and region selectivity. J Neurochem. 1998 Jan;70(1):299-307.

[2]. Sarah S Zaher, et al. 3-hydroxykynurenine suppresses CD4+ T-cell proliferation, induces T-regulatory-cell development, and prolongs corneal allograft survival. Invest Ophthalmol Vis Sci. 2011 Apr 22;52(5):2640-8.

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

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