

## Plecanatide

Cat. No.:	HY-108741
CAS No.:	467426-54-6
Molecular Formula:	C <sub>65</sub> H <sub>104</sub> N <sub>18</sub> O <sub>26</sub> S <sub>4</sub>
Molecular Weight:	1681.89
Sequence:	Asn-Asp-Glu-Cys-Glu-Leu-Cys-Val-Asn-Val-Ala-Cys-Thr-Gly-Cys-Leu (Disulfide bridge: Cys4-Cys12; Cys7-Cys15)
Sequence Shortening:	NDECELCVNVACTGCL (Disulfide bridge: Cys4-Cys12; Cys7-Cys15)
Target:	Guanylate Cyclase
Pathway:	GPCR/G Protein
Storage:	Sealed storage, away from moisture
	Powder    -80°C    2 years
	-20°C    1 year
	* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)

### BIOLOGICAL ACTIVITY

Description	Plecanatide, an analogue of Uroguanylin, is an orally active guanylate cyclase-C (GC-C) receptor agonist. Plecanatide activates GC-C receptors to stimulate cGMP synthesis with an EC <sub>50</sub> of 190 nM in T84 cells assay. Plecanatide shows anti-inflammatory activity in models of murine colitis <sup>[1][2][3]</sup> .								
IC <sub>50</sub> & Target	EC <sub>50</sub> : 190 nM (guanylate cyclase-C) <sup>[1]</sup>								
In Vitro	Plecanatide (1 nM-10 μM) activates GC-C receptor to stimulate cyclic guanosine monophosphate (cGMP) synthesis in a dose-dependent manner with EC <sub>50</sub> of 190 nM in T84 cells <sup>[1]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.								
In Vivo	<p>Plecanatide (0.5 and 2.5 mg/kg, p.o.) ameliorates spontaneous and chemically induced colitis after treatment for 7 days in BALB/c mice, and 14 days in TCRα<sup>-/-</sup> mice<sup>[1]</sup>.</p> <p>Plecanatide (0.005-5 mg/kg, once daily for 7 days) also shows anti-inflammatory activity in dextran sulfate sodium (DSS) and trinitrobenzene sulfonic (TNBS)-induced colitis in BDF-1 mice<sup>[1]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table> <tr> <td>Animal Model:</td><td>Female BALB/c mice (2-4 month old) are induced colitis by TNBS<sup>[1]</sup></td></tr> <tr> <td>Dosage:</td><td>0, 0.5 and 2.5 mg/kg</td></tr> <tr> <td>Administration:</td><td>P.o. for 7 days</td></tr> <tr> <td>Result:</td><td>Effectively reduced colitis severity scores as compared to vehicle treatment.</td></tr> </table>	Animal Model:	Female BALB/c mice (2-4 month old) are induced colitis by TNBS <sup>[1]</sup>	Dosage:	0, 0.5 and 2.5 mg/kg	Administration:	P.o. for 7 days	Result:	Effectively reduced colitis severity scores as compared to vehicle treatment.
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### REFERENCES

[1]. Shailubhai K,et, al. Plecanatide and dolcanatide, novel guanylate cyclase-C agonists, ameliorate gastrointestinal inflammation in experimental models of murine

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colitis. World J Gastrointest Pharmacol Ther. 2015 Nov 6;6(4):213-22.

[2]. Rao SSC. Plecanatide: a new guanylate cyclase agonist for the treatment of chronic idiopathic constipation. Therap Adv Gastroenterol. 2018 Jun 8;11:1756284818777945.

[3]. Shailubhai K, et, al. Plecanatide, an oral guanylate cyclase C agonist acting locally in the gastrointestinal tract, is safe. Dig Dis Sci. 2013 Sep;58(9):2580-6.

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

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