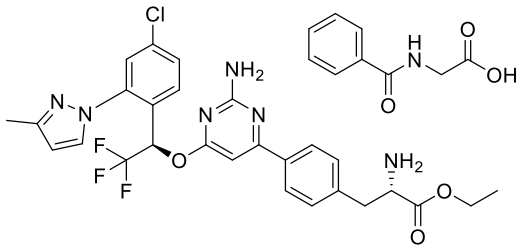
Product data sheet

MedKoo Cat#: 206122 Name: Telotristat etiprate CAS#: 1137608-69-5 (etiprate) Chemical Formula: $C_{36}H_{35}ClF_3N_7O_6$ Molecular Weight: 754.16	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:
Telotristat etiprate, its free base also known as LX1606 or LX1032, is an oral serotonin synthesis inhibitor or peripheral tryptophan hydroxylase (TPH) inhibitor. Telotristat etiprate has activity in controlling diarrhea associated with carcinoid syndrome. LX1606 acts by inhibiting the enzyme tryptophan hydoxylase (TPH) and reduces serotonin production both inside and outside the GI tract without affecting brain serotonin levels. TPH is the rate-limiting enzyme involved in serotonin biosynthesis and is present in metastatic carcinoid tumor cells.

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	59.33	78.67
DMSO:PBS (pH 7.2) (1:2)	0.33	0.44
DMF	50.0	66.30
Ethanol	5.0	6.63

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	1.33 mL	6.63 mL	13.26 mL
5 mM	0.27 mL	1.33 mL	2.65 mL
10 mM	0.13 mL	0.66 mL	1.33 mL
50 mM	0.03 mL	0.13 mL	0.27 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study
In vitro study

1. Herrera-Martínez AD, Feelders RA, Van den Dungen R, Dogan-Oruc F, van Koetsveld PM, Castaño JP, de Herder WW, Hofland LJ. Effect of the Tryptophan Hydroxylase Inhibitor Telotristat on Growth and Serotonin Secretion in 2D and 3D Cultured Pancreatic Neuroendocrine Tumor Cells. Neuroendocrinology. 2020;110(5):351-363. doi: 10.1159/000502200. Epub 2019 Jul 19. PMID: 31319410.

In vivo study

1. Kim JJ, Wang H, Terc JD, Zambrowicz B, Yang QM, Khan WI. Blocking peripheral serotonin synthesis by telotristat etiprate (LX1032/LX1606) reduces severity of both chemical- and infection-induced intestinal inflammation. Am J Physiol Gastrointest Liver Physiol. 2015 Sep 15;309(6):G455-65. doi: 10.1152/ajpgi.00299.2014. Epub 2015 Jul 23. PMID: 26206858.

2. Margolis KG, Stevanovic K, Li Z, Yang QM, Oravecz T, Zambrowicz B, Jhaver KG, Diacou A, Gershon MD. Pharmacological reduction of mucosal but not neuronal serotonin opposes inflammation in mouse intestine. Gut. 2014 Jun;63(6):928-37. doi: 10.1136/gutjnl-2013-304901. Epub 2013 Jun 7. PMID: 23749550; PMCID: PMC4034681.

7. Bioactivity

Biological target:

Telotristat etiprate (LX1606 Hippurate) is an inhibitor of tryptophan hydroxylase that reduces serotonin production.

In vitro activity

Telotristat strongly decreased serotonin secretion in a dose-dependent manner in BON-1 (Fig. 1a) and QGP-1 cells (Fig. 1b) after 3 days of incubation. QGP-1 cells were more sensitive to telotristat (IC50: 1.3 × 10–9 M; 95% CI: 7.3–2.4 × 10–9 M) than BON-1 cells (IC50: 3.3 × 10–8 M; 95% CI: 1.8–6.2 × 10–8 M). The clinically relevant concentration of telotristat (10–8 M) decreased serotonin secretion by 40.1 ± 17.4% in BON-1 and by 72.5 ± 15.2% in QGP-1 cells ($p < 0.001$). Serotonin release was totally suppressed in both cell lines after the incubation with the maximal evaluated dose (10–5 M) ($p < 0.001$). No statistically significant effect on cell growth (DNA content per well) was observed in cells incubated with telotristat for 3 days in medium containing 0.1% BSA (Fig. 1) or 10% FCS (online suppl. Fig. 1).

Reference: Neuroendocrinology. 2020;110(5):351-363. https://pubmed.ncbi.nlm.nih.gov/31319410/

In vivo activity

To investigate the effect of LX1606 treatment in a chronic model of colitis, mice were administered three cycles of DSS solution and treated with LX1606 for 6 days starting 1 day prior to the beginning of the 2nd and 3rd DSS cycles (Fig. 4A). Treatment with LX1606 significantly reduced whole colon tissue 5-HT content compared with vehicle-treated controls (Fig. 4B). Following treatment with LX1606, there was attenuation of disease severity, indicated by lower disease activity scores during the periods of DSS administration (Table 1). There was reduced macroscopic damage in LX1606-treated groups compared with controls on day 37 post-DSS administration (Fig. 4C). The colon length of mice treated with LX1606 was significantly increased compared with vehicle-treated mice post-DSS (Fig. 4D). There was also less severe histological damage (less distortion of epithelial cell structure, decreased inflammatory cell infiltrate, less significant thickening of the muscularis mucosa) in LX1606-treated mice compared with vehicle-treated controls (Fig. 4E). Delay in disease onset and disease severity in LX1606-treated mice was associated with lower MPO activity and reduced IL-1β levels (Fig. 4F).

Reference: Am J Physiol Gastrointest Liver Physiol. 2015 Sep 15;309(6):G455-65. https://pubmed.ncbi.nlm.nih.gov/26206858/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.