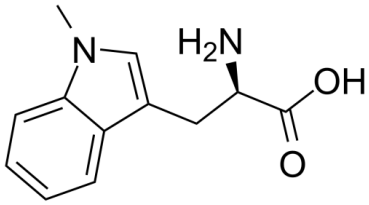
Data Sheet

Product Name:	Indoximod
Cat. No.:	CS-4941
CAS No.:	110117-83-4
Molecular Formula:	C12H14N2O2
Molecular Weight:	218.25
Target:	Indoleamine 2,3-Dioxygenase (IDO)
Pathway:	Metabolic Enzyme/Protease
Solubility:	DMSO : 0.55 mg/mL (2.52 mM; Need ultrasonic and warming); H2O : 5 mg/mL (22.91 mM; ultrasonic and adjust pH to 2 with HCl)



BIOLOGICAL ACTIVITY:

Indoximod (D-1MT, NLG8189) is an indoleamine 2,3-dioxygenase (**IDO**) pathway inhibitor with a K_i of 19 μM. IC50 & Target: Ki: 19 μM (IDO)[2] **In Vitro:** The IDO inhibitor 1-methyl-tryptophan exists in two stereoisomers with potentially different biological properties. The L isomer is the more potent inhibitor of IDO activity using the purified enzyme and in HeLa cell–based assays. However, the D isomer is significantly more effective in reversing the suppression of T cells created by IDO-expressing dendritic cells. The L isomer of 1-methyl-tryptophan functioned as a competitive inhibitor (K_i=19 μM), whereas the d isomer is much less effective. The DL mixture is intermediate, with a K_i of 35 μM[1]. **In Vivo:** The D isomer is more efficacious as an anticancer agent in chemo-immunotherapy regimens using cyclophosphamide, paclitaxel, or gemcitabine, when tested in mouse models of transplantable melanoma and transplantable and autochthonous breast cancer. The D isomer of 1-methyl-tryptophan specifically targets the IDO gene because the antitumor effect of d-1-methyl-tryptophan is completely lost in mice with a disruption of the IDO gene (IDO-knockout mice). Oral administration of dl-1-methyl-tryptophan in combination with paclitaxel can elicit regression of autochthonous breast tumors[1].

PROTOCOL (Extracted from published papers and Only for reference)

Kinase Assay: [1]1MT enantiomers are solubilized in DMSO containing 0.1N HCl and added at concentrations of 100, 50, and 0 μM to wells containing the reaction mixture with tryptophan (0-200 μM) followed by addition of IDO enzyme. Plates are sealed and incubated 1 hr in a humidified 37°C incubator, after which the reactions are terminated by addition of 12.5 μl 30% TCA per well. Plates are then resealed in plastic wrap, incubated 30 min at 50°C to hydrolyze the reaction product N-formylkynurenine to kynurenine, and centrifuged. Supernatants are transferred to a flat-bottom 96-well plate, mixed with 100 μl Ehrlich reagent and incubated 10 min at room temperature. Absorbance at 490 nm is read[1]. **Animal Administration:** [1]Mouse: B16F10 melanoma are established in B6 mice. For administration in drinking water, D-1MT is prepared at 2 mg/mL in water supplemented with a small amount of aspartame (2 envelopes per liter) to improve acceptance by the mice, and filter sterilized. The solution is delivered in standard autoclaved drinking-water bottles. Mice drink 4.5-5.0 mL/day (similar to consumption of water without drug)[1].

References:

[1]. Hou DY, et al. Inhibition of indoleamine 2,3-dioxygenase in dendritic cells by stereoisomers of 1-methyl-tryptophancorrelates with antitumor responses. Cancer Res. 2007 Jan 15;67(2):792-801.

CAIndexNames:

D-Tryptophan, 1-methyl-

SMILES:

N[C@H](CC1=CN(C)C2=CC=CC=C12)C(O)=O

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

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