Product Data Sheet

Product Name: 6-fluoro-DL-Tryptophan
Cat. No.: GC14000

Chemical Properties

Cas. No.	7730-20-3		
Chemical Name	6-fluoro-tryptophan		
SMILES	FC1=CC2=C(C(CC(N)C(O)=O)=CN2)C=C1		
Formula	$C_{11}H_{11}FN_2O_2$	M.Wt	222.2
Solubility	≤0.1mg/ml in methanol;1mg/ml in acetic acid (2%)	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	6-fluoro-DL-Tryptophan		

Background

6-fluoro-DL-Tryptophan is a serotonin (5-HT) synthesis inhibitor.

Serotonin or 5-hydroxytryptamine (5-HT), a monoamine neurotransmitter, is biochemically derived from tryptophan. Serotonin is primarily present in the gastrointestinal tract, blood platelets, and the central nervous system of animals. Serotonin is considered to be a contributor to feelings of well-being and happiness.

In vitro: The potential competition was investigated between L-tryptophan (TRP) and 6-fluoro-DL-tryptophan (6-F-TRP). In equilibrium dialysis experiments, albumin bound about 80% of TRP and 50% of 6-F-TRP. Competitive inhibition was assessed as the decrease in the apparent Ka of TRP in the presence of 6-F-TRP, with no modification of the N value [1].

In vivo: Rats werer administered 6-fluoro-DL-tryptophan (6F-Trp) and its neurochemical effects on central catechole and indole were evaluated. Results showed that neither

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norepinephrine nor dopamine and its major metabolites were affected by 6F-Trp. With regard to serotonin (5-HT), 6F-Trp could induce a transient depletion in all the studied brain areas, with a maximum of about 60-65% obtained between 1 and 3 hr. After 6 hr, 5-HT levels returned to control values. In addition, the 5-hydroxyindolacetic acid (5-HIAA) level was also reduced 3 hr after 6F-Trp administration. A large dose-dependent increase in tryptophan was seen in the four brain areas, mainly due to an inhibition of tryptophan incorporation into protein, as demonstrated by experiments with mouse neuroblastoma cells [2].

Clinical trial: So far, no clinical study has been conducted.

References:
[1] Chanut, E. ,Zini, R.,Trouvin, J.H., et al. Albumin binding and brain uptake of 6-fluoro-DL-tryptophan: Competition with L-tryptophan. Biochemical Pharmacology 44(10), 2082-2085 (1992).
[2] Chanut, E. ,Trouvin, J.H.,Bondoux, D., et al. Metabolism of 6-fluoro-DL-tryptophan and its specific effects on the rat brain serotoninergic pathway. Biochemical Pharmacology 45(5), 1049-1057 (1992).