

## Leucettine L41

## Chemical Properties

CAS No. : 1112978-84-3

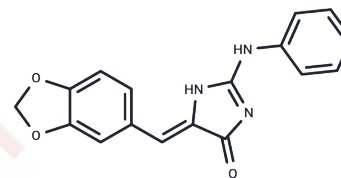
Formula: C17H13N3O3

Molecular Weight: 307.3

Store at low temperature

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.



## Biological Description

Description	Leucettine L41 (LeucettineL41) is a selective DYRK1A inhibitor that inhibits DYRK2, CLK1, and CLK3, inducing autophagy linked to CLK inhibition. It is used to study Alzheimer's disease and memory deficits.
Targets(IC50)	CDK,DYRK
In vitro	Leucettine L41 is a potent inhibitor of bispecific tyrosine phosphorylated regulated kinase 1A (DYRK1A), DYRK2, CDC-like kinase 1 (CLK1), and CLK3 with IC50 of 0.04, 0.035, 0.015, and 4.5 $\mu$ M, respectively. Leucettine L41 inhibits phosphorylation of serine/arginine-rich protein (SRp). [1]
In vivo	Leucettine L41(0.4, 1.2, 4 $\mu$ g) prevented A $\beta$ 25-35-induced hippocampal memory impairment and neurotoxicity in mice. [2] Leucettine L41(20 mg/kg, peritoneal injection) AAV-AD rat model showed decreased soluble P-tau form but unchanged soluble A $\beta$ 42 level. [4]

## Solubility Information

Solubility	DMSO: 80 mg/mL (260.33 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 3.3 mg/mL (10.74 mM),Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

### Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.2541 mL	16.2707 mL	32.5415 mL
5 mM	0.6508 mL	3.2541 mL	6.5083 mL
10 mM	0.3254 mL	1.6271 mL	3.2541 mL
50 mM	0.0651 mL	0.3254 mL	0.6508 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

### Reference

Debdab M, et al. Leucettines, a class of potent inhibitors of cdc2-like kinases and dual specificity, tyrosine phosphorylation regulated kinases derived from the marine sponge leucettamine B: modulation of alternative pre-RNA splicing. *J Med Chem.* 2011 Jun 23;54(12):4172-86.

Naert G, et al. Leucettine L41, a DYRK1A-preferential DYRKs/CLKs inhibitor, prevents memory impairments and neurotoxicity induced by oligomeric A $\beta$ 25-35 peptide administration in mice. *Eur Neuropsychopharmacol.* 2015 Nov;25(11):2170-82.

Fant X, et al. cdc-like/dual-specificity tyrosine phosphorylation-regulated kinases inhibitor leucettine L41 induces mTOR-dependent autophagy: implication for Alzheimer's disease. *Mol Pharmacol.* 2014 Mar;85(3):441-50.

Souchet B, et al. Cerebral Phospho-Tau Acts Synergistically with Soluble A $\beta$ 42 Leading to Mild Cognitive Impairment in AAV-AD Rats. *J Prev Alzheimers Dis.* 2022;9(3):480-490.

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