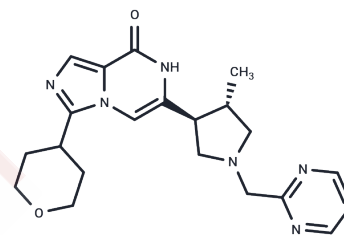


Tovinontrine

Chemical Properties

CAS No. :	2062661-53-2
Formula:	C ₂₁ H ₂₆ N ₆ O ₂
Molecular Weight:	394.47
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	Tovinsontrine (IMR-687) (IMR-687) is a potent and selective inhibitor of phosphodiesterase-9 (PDE9), designed to target sickle cell disease treatment. It exhibits high efficacy, with IC ₅₀ values of 8.19 nM and 9.99 nM for PDE9A1 and PDE9A2, respectively [1].
Targets(IC ₅₀)	PDE
In vitro	Tovinsontrine (IMR-687) (0.03-10 μM) treatment for 6 hours in erythroid K562 cells increases cGMP in a dose-dependent manner.[1] IMR-687 (0.1-10 μM) treatment in erythroid K562 cells for 72 hours induces hemoglobin (HbF) in a dose-dependent manner.[1]
In vivo	Tovinsontrine (IMR-687) (30 mg/kg/day; 30 days) resulted in a more than three-fold increase in the proportion of HbF+ F-cells (8.4% in the vehicle-treated group and 27.3% in the IMR-687 treated group), accompanied by a corresponding two-fold reduction in sickled red blood cells (56.3% in the vehicle-treated group and 24.4% in the IMR-687 treated group).[1]

Solubility Information

Solubility	DMSO: 90 mg/mL (228.15 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 (8.37 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	2.535 mL	12.6752 mL	25.3505 mL
5 mM	0.507 mL	2.535 mL	5.0701 mL
10 mM	0.2535 mL	1.2675 mL	2.535 mL
50 mM	0.0507 mL	0.2535 mL	0.507 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

McArthur JG, et al. A novel, highly potent and selective phosphodiesterase-9 inhibitor for the treatment of sickle cell disease. *Haematologica*. 2020;105(3):623-631.

Makis A, et al. Novel Therapeutic Advances in β -Thalassemia. *Biology (Basel)*. 2021;10(6):546.

Langer AL, et al. β -Thalassemia: evolving treatment options beyond transfusion and iron chelation. *Hematology Am Soc Hematol Educ Program*. 2021;2021(1):600-606.

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Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481