

(R)-ND-336

Chemical Properties

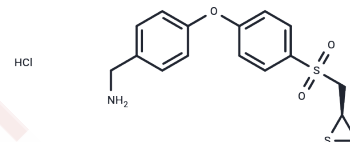
CAS No. : 2252493-33-5

Formula: C₁₆H₁₈ClNO₃S₂

Molecular Weight: 371.89

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	(R)-ND-336 is a highly potent and selective MMP-9 inhibitor with a K_i value of 19 nM and also exhibits inhibitory activity against MMP-2 ($K_i = 127$ nM) and MMP-14 ($K_i = 119$ nM). With significant potential, (R)-ND-336 is being investigated in diabetic foot ulcers (DFUs) research [1].
Targets(IC50)	MMP,Others
In vitro	(R)-ND-336 exhibits minimal inhibition of other MMPs, with an inhibition constant (K_i) greater than 100 μ M. It possesses a prolonged residence time of 300 minutes, indicative of the duration it remains bound to MMP-9. Moreover, (R)-ND-336 demonstrates a promising IC ₅₀ value of 143 μ M, resulting in a therapeutic index ratio of 7530. This highlights its significant selectivity for MMP-9 over other MMPs without being cytotoxic [1].
In vivo	(R)-ND-336, applied topically at 50 μ g per wound daily over a 14-day period, significantly enhances wound healing, as evidenced by accelerated healing rates. Pharmacokinetic measurements reveal that (R)-ND-336 achieves an area under the curve (AUC) of 1.3 μ M·min following topical administration and 35 μ M·min after intravenous administration, with a resultant AUC ratio (topical to intravenous) of 3.7%. This indicates that topical application results in minimal systemic absorption in the db/db mouse model. Specifically, the study utilized female db/db mice, aged 8 weeks and weighing approximately 40g, to assess the compound's efficacy. The findings demonstrate not only accelerated wound healing but also the complete inhibition of MMP-9 enzyme activity, thus proving (R)-ND-336's potential therapeutic benefits.

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.689 mL	13.4448 mL	26.8897 mL
5 mM	0.5378 mL	2.689 mL	5.3779 mL
10 mM	0.2689 mL	1.3445 mL	2.689 mL
50 mM	0.0538 mL	0.2689 mL	0.5378 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.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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