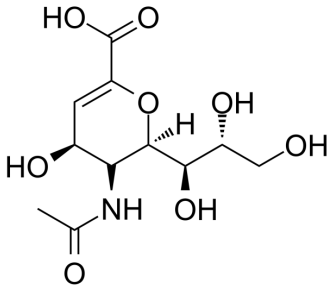
2,3-Dehydro-2-deoxy-N-acetylneuraminic acid

Cat. No.:	HY-125798
CAS No.:	24967-27-9
Molecular Formula:	$C_{11}H_{17}NO_8$
Molecular Weight:	291.25
Target:	Influenza Virus
Pathway:	Anti-infection
Storage:	Powder -20°C 3 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

H_2O : 33.33 mg/mL (114.44 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	3.4335 mL	17.1674 mL	34.3348 mL
	5 mM	0.6867 mL	3.4335 mL	6.8670 mL
	10 mM	0.3433 mL	1.7167 mL	3.4335 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

N-acetyl-2,3-dehydro-2-Deoxyneuraminic Acid (Neu5Ac2en) is a potent neuraminidase (sialidase) inhibitor. N-acetyl-2,3-dehydro-2-Deoxyneuraminic Acid shows inhibitory activities against human neuraminidase enzymes with IC_{50}s of 143, 43, 61, and 74 μM for NEU1, NEU2, NEU3, and NEU4, respectively. Anti-influenza virus activity[1][2].

In Vitro

N-acetyl-2,3-dehydro-2-Deoxyneuraminic Acid (Neu5Ac2en) (10-100 μM) signifcantly inhibits sialidase activity in INS-1D cells [4].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

N-acetyl-2,3-dehydro-2-Deoxyneuraminic Acid (Neu5Ac2en) (10 mg/kg; i.p.; daily) attenuates pulmonary fibrosis in a mouse model[3].

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Animal Model:	Mice (Mouse model of pulmonary fibrosis)[3]
Dosage:	10 mg/kg

Administration:	I.p.; daily (starting at day 10 after Bleomycin, and then euthanized at day 21)
Result:	Inhibition of sialidases starting at day 10 after bleomycin attenuates fibrosis.

REFERENCES

[1]. Magesh S, et al. Design, synthesis, and biological evaluation of human sialidase inhibitors. Part 1: selective inhibitors of lysosomal sialidase (NEU1). Bioorg Med Chem Lett. 2008;18(2):532-537.

[2]. Xiao A, et al. Sialidase-catalyzed one-pot multienzyme (OPME) synthesis of sialidase transition-state analogue inhibitors. ACS Catal. 2018;8(1):43-47.

[3]. Karhadkar TR, et al. Sialidase inhibitors attenuate pulmonary fibrosis in a mouse model. Sci Rep. 2017;7(1):15069. Published 2017 Nov 8.

[4]. Minami A, et al. The sialidase inhibitor 2,3-dehydro-2-deoxy-N-acetylneuraminic acid is a glucose-dependent potentiator of insulin secretion. Sci Rep. 2020;10(1):5198. Published 2020 Mar 23.

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