Nonapeptide-1 acetate salt

Cat. No.: HY-P0097A

Molecular Formula: $C_{63}H_{91}N_{15}O_{11}S$

Molecular Weight: 1266.56

Target: Melanocortin Receptor

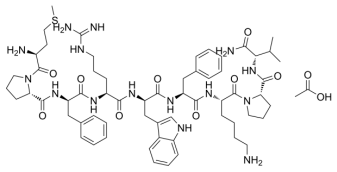
Pathway: GPCR/G Protein; Neuronal Signaling

Storage: Sealed storage, away from moisture

Powder -80°C 2 years

-20°C 1 year

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

H_2O : 50 mg/mL (39.48 mM; Need ultrasonic)

Preparing Stock Solutions	Concentration \ Solvent \ Mass	1 mg	5 mg	10 mg
	1 mM	0.7895 mL	3.9477 mL	7.8954 mL
	5 mM	0.1579 mL	0.7895 mL	1.5791 mL
	10 mM	0.0790 mL	0.3948 mL	0.7895 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 50 mg/mL (39.48 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Nonapeptide-1 (Melanostatine-5) acetate salt, a peptide hormone, is a selective antagonist of MC1R (K_i: 40 nM). Nonapeptide-1 acetate salt is a competitive α-MSH antagonist that potently inhibits intracellular cAMP and melanosome dispersion induced by α-MSH in melanocytes (IC_{50}: 2.5 nM and 11 nM, respectively). Nonapeptide-1 acetate salt inhibits melanin synthesis, and can be used in the research of skin pigmentation and regulation of steroid production in the adrenal gland, skin cancer[1][2][3].

IC_{50} & Target	MC1R	MC3R	MC4R	MC5R
		0.47 μM (Ki)	1.34 μM (Ki)	2.4 μM (Ki)

In Vitro

Nonapeptide-1 acetate salt (153N-6) inhibits α-melanocyte hormone (α-MSH)-induced melanosome dispersion, with an IC_{50} value of 11 nM[1].

Nonapeptide-1 acetate salt (0.1 nM-1 μM, 30 min) inhibits α-MSH-induced intracellular cAMP levels in melanocytes, with an IC_{50} of 2.5 nM[1].

Nonapeptide-1 acetate salt (153N-6) shows highest affinity for MC1R (K_i: 40 nM) in COS-1 cells expressing human receptors, and is selective for MC1R over MC3R, MC4R, and MC5R (K_i: 0.47, 1.34, and 2.4 μM, respectively)[2].
Nonapeptide-1 acetate salt (N-1A, 20 μM, 3 days) inhibits the basal melanin synthesis and reverses UVA-induced melanin increase in Human epidermal melanocytes (HEM cells) and HaCaT cells[3].
Nonapeptide-1 acetate salt (20 μM, 3 days) competes with α-MSH and downregulates the expression of MC1R, tyrosinase, TRP1, TRP2, and MITF via binding to MC1R in HaCaT cells and HEM cells[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis[3]

Cell Line:	HaCaT cells, Human epidermal melanocytes (HEM)
Concentration:	20 μM
Incubation Time:	3 days
Result:	Downregulated the expression of MC1R, tyrosinase, TRP1, TRP2, and MITF.

CUSTOMER VALIDATION

- Chem Rev. 2022 Apr;39(2):327-335.

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REFERENCES

[1]. [2] Schiöth, H.B., et al. Characterization of the binding of MSH-B, HB-228, GHRP-6 and 153N-6 to the human melanocortin receptor subtypes. Neuropeptides 31(6), 565-571 (1997).

[2]. Jiaoquan Chen, et al. Effects of tea polyphenols on UVA-induced melanogenesis via inhibition of α-MSH-MC1R signalling pathway. Postepy Dermatol Alergol. 2022 Apr;39(2):327-335.

[3]. Jayawickreme CK, et al. Discovery and structure-function analysis of alpha-melanocyte-stimulating hormone antagonists. J Biol Chem. 1994 Nov 25;269(47):29846-54.

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