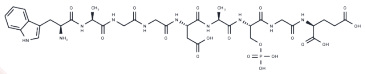
Data Sheet (Cat.No.T82587)

TargetMol

Delta (Phospho) Sleep Inducing Peptide

Chemical Properties



CAS No. : 70754-23-3

Formula: C35H49N10O18P

Molecular Weight: 928.79

Storage: Keep away from moisture
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	Delta (Phospho) Sleep Inducing Peptide (DSIP-P) is a phosphorylated synthetic analog of the endogenous sleep-regulating neuropeptide DSIP at the serine residue at position 7. Delta (Phospho) Sleep Inducing Peptide is a peptide with prolonged sleep-promoting effects and can induce changes in the circadian locomotor behavior in rats.
In vitro	Method: Rat pineal glands were cultured in Richter's medium for 48 h, then incubated with Delta (Phospho) Sleep Inducing Peptide (0.2-2000 nM) together with norepinephrine (NE, 10^{-6} M) for 4 h, followed by measurement of N-acetyltransferase (NAT) activity. Result: Delta (Phospho) Sleep Inducing Peptide at a concentration of 2 nM significantly enhanced NE-induced NAT activity, increasing NAT activity by nearly 100% [1].
In vivo	Method: Female rats were adapted to a 12 hr light-dark cycle (lights on 6:00-18:00) and then injected intravenously with Delta (Phospho) Sleep Inducing Peptide (0.1 nmol/kg) in the late afternoon (17:30-18:00) daily for 4 consecutive days. Circadian locomotor activity rhythms were monitored using an Animex activity recorder. Result: Delta (Phospho) Sleep Inducing Peptide affected the rat's daily activity pattern on the first day of injection, and a stable new activity rhythm was established by the third day, which was opposite to the external light-dark cycle (Zeitgeber). This was manifested as reduced activity during the dark phase (night) and relatively increased activity during the light phase (day), indicating a relative reversal or shift of the circadian rhythm [2]. Method: Male rats (Sprague-Dawley) were injected with Delta (Phospho) Sleep Inducing Peptide (20 or 200 pmol/kg) into the third cerebral ventricle just before the onset of the dark phase under a 12:12 hr light-dark cycle. Sleep phases were recorded and analyzed for 48 hours post-injection using electroencephalography (EEG) and electromyography (EMG). Result: Delta (Phospho) Sleep Inducing Peptide (200 pmol/kg) increased slow-wave sleep (SWS, +17.3%) and paradoxical sleep (PS, +32.3%) during the dark phase without shortening sleep latency. The SWS-promoting effect persisted into the following light phase and returned to control levels by the second day [3].

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.0767 mL	5.3833 mL	10.7667 mL
5 mM	0.2153 mL	1.0767 mL	2.1533 mL
10 mM	0.1077 mL	0.5383 mL	1.0767 mL
50 mM	0.0215 mL	0.1077 mL	0.2153 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.