Product Data Sheet

Product Name: TAT-D1 peptide acetate
Cat. No.: GC79287

Chemical Properties

Cas. No.			
Formula	$C_{144}H_{257}N_{57}O_{43}{\cdot}xC_2H_4O_2$	M.Wt	3474.94
Solubility	H_2O: ≥ 100 mg/mL	Storage	Sealed storage, away from moisture
General tips	For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure			

Gly-Arg-Lys-Lys-Arg-Arg-Gln-Arg-Arg-
Arg-Pro-Gln-Gly-Ser-Ser-Glu-Asp-Leu-
Lys-Lys-Glu-Glu-Ala-Ala-Gly-Ile-Ala-Arg-
Pro-Leu (Acetate salt)

Background

TAT-D1 peptide acetate is a dopamine D1-D2 receptor heterodimer inhibitor. TAT-D1 peptide acetate disrupts the function of dopamine D1-D2 receptor heteromers, enhances subchronic amphetamine-induced locomotor activity, and exacerbates the expression of amphetamine-induced locomotor

sensitization. TAT-D1 peptide acetate produces rapid anxiolytic and antidepressant-like effects in rat models of depression and anxiety, and inhibits c-fos expression in the nucleus accumbens of rats. TAT-D1 peptide acetate can be used in the research of psychostimulant addiction, depression and anxiety disorders [1] [2] [3].

In Vivo, TAT-D1 peptide (i.c.v.; 15 minutes prior to injection; administered daily for 5 consecutive days; single dose, 300 pM) acetate disrupts the function of dopamine D1-D2 receptor heteromers, enhances subchronic amphetamine-induced locomotor activity, and exacerbates the expression of amphetamine-induced locomotor sensitization[1]. TAT-D1 peptide (i.c.v.; single dose, 300 pM) acetate exerts antidepressant-like effects in unstressed rats by reducing the total immobility time in the forced swim test; it exerts anxiolytic-like effects by increasing the time rats spend in the open arms of the elevated plus maze and shortening the feeding latency in the novelty-suppressed feeding test. It exerts rapid antidepressant effects by reversing the anhedonic reduction in sucrose preference in rats exposed to chronic unpredictable stress (CUS), completely reversing the CUS-induced prolongation of feeding latency in a novel environment, and increasing the intake of Froot Loops. It inhibits SKF 83959 -induced c-fos expression in the nucleus accumbens and SKF 83959-induced grooming behavior, while administration alone induces region-specific c-fos expression in the cortex, anterior olfactory area, lateral habenula and thalamus[2].

References:
[1]. Shen MY, et al. The dopamine D1-D2 receptor heteromer exerts a tonic inhibitory effect on the expression of amphetamine-induced locomotor sensitization. Pharmacol Biochem Behav. 2015;128:33-40.
[2]. Shen MY, et al. Rapid anti-depressant and anxiolytic actions following dopamine D1-D2 receptor heteromer inactivation. Eur Neuropsychopharmacol. 2015;25(12):2437-2448.
[3]. Perreault ML, et al. Regulation of c-fos expression by the dopamine D1-D2 receptor heteromer. Neuroscience. 2015;285:194-203.