

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

Caution: Product has not been fully validated for medical applications. For research use only.

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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.

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