For Research Use Only

Omberacetam

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Catalog Number: CM02674

产品信息

Catalog Number:
CM02674

CAS号:
157115-85-0

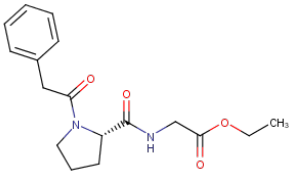
分子式:
$C_{17}H_{22}N_2O_4$

主要靶点:
Others|iGluR

主要通路:
离子通道|神经科学

分子量:
318.37

溶解度:
DMSO:100 mg/mL (314.10 mM)



体外活性

Omberacetam（以10 μM浓度加入培养基，于Aβ 25-35前72小时）对Aβ 25-35（5 μM，24小时）诱导的PC12细胞损伤的神经保护作用进行了研究。考察了化合物对由Aβ 25-35引起的细胞活性、钙稳态、ROS水平、线粒体功能、tau蛋白磷酸化以及神经突起生长损伤的保护能力。PC12细胞暴露于Aβ 25-35后，观察到ROS水平、细胞内钙和Ser396处tau蛋白磷酸化水平的增加；这些改变伴随着细胞活性下降和凋亡增加。Omberacetam处理改善了PC12细胞的存活率，降低了早期和晚期凋亡细胞的数量，减少了细胞内活性氧和钙的水平，提高了线粒体膜电位。此外，Omberacetam预处理显著减轻了Aβ 25-35引起的tau蛋白在Ser396处的过度磷酸化，并改善了神经突起生长的变化。

体内活性

Noopept在长期(21天)治疗后通过提高受训动物的百分比[2]，消除了学习性无助的表现。

动物实验

Experiments were carried out on adult outbred albino male rats (n=376; 250-300 g) kept under vivarium conditions with 12-h light period with free access to water and standard food. The operant training was performed in a modified setup for active avoidance conditioning under conditions of uncertain environment.The animals were intraperitoneally injected (1 ml/kg) with noopept (0.1, 0.5, and 1.0 mg/kg) and piracetam (100, 300, and 500 mg/kg; reference drug), afobazol (1, 5, and 10 mg/kg), and buspiron (0.5, 1.0, and 5.0 mg/kg; reference drug) and diazepam (0.05, 0.1, and 0.5 mg/kg; reference drug). Control rats were injected with the same volume of saline. Stability of active avoidance behavior was tested after 48 h and 7 days. The animals with learned helplessness neurosis were injected with noopept and afobazol for 21 days, after which stability of the active avoidance behavior was repeatedly tested[2].

细胞实验

PC12 cells were cultured routinely at 37°C in DMEM medium, supplemented with 10% fetal bovine serum (FBS), 5% horse serum, 2 mM L-glutamine, 50 μg/ml gentamicin. To induce PC12 differentiation, NGF (50 ng/ml) was added to the DMEM containing 1% FBS, followed by a 5-day incubation. Differentiated PC12 (dPC12) cells were pretreated with noopept at concentration of 10 μM for 72 h, then cells were rinsed with the medium and exposed to amyloid-β-peptide (Aβ 25–35;5 μM) for 24 h. Untreated cells were used as control[1].

储存

keep away from moisture | Powder: -20°C for 3 years | In solvent: -80°C for 1 year | Shipping with blue ice.