Product Data Sheet

Product Name: TDN345
Cat. No.: GC31038

Chemical Properties

Cas. No.	134069-68-4		
SMILES	O=C(N1C(C)(C)C)OC2(CCN(CCCC(C3=CC=C(F)C=C3)C4=CC=C(F)C=C4)CC2)C1=C		
Formula	$C_{28}H_{34}F_2N_2O_2$	M.Wt	468.58
Solubility	Soluble in DMSO	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ 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	TDN345		

Protocol

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Animal experiment:

Male Mongolian gerbils (50-70 g body weight) are anesthetized lightly by ether inhalation. A 1-2 cm midline throat incision provided access to both carotid arteries, which are clamped with microaneurysm clamps immediately after recovery from anesthesia. Sixty minutes before occlusion, TDN-345 (0.3 or 1.0 mg/kg suspended in a 5% gum arabic solution or 0.1 or 0.3 mg/kg with 1% $NaHCO_3$ suspended in a 5% gum arabic solution) or vehicle is administered orally. After 15 min of bilateral carotid artery occlusion, the clamps are removed. Ninety minutes after reperfusion, TDN-345 or vehicle is again administered orally. The body temperature is maintained at 37°C during the experimental period using a heating pad. The experiments are performed in nine to 15 animals in each group. Animal survival is observed 8 h and 7 days after reperfusion, and neurological signs are evaluated according to the scoring system as an ischemic neurological score for 5 h after the ischemic insult from an area under the time-neurological deficit score curve (AUCreperfusion (0-300 min)) (hair roughed up or tremor, obtunded, paucity of move, 1; ptosis, seizure, 2; head cocked, eyes fixed open, splayed out hind limbs, extreme rotation, circling behavior, rolling seizure, 3; coma, 6; death, 34). Nine to 15 animals are used in each experimental group.

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References:

[1]. Fukumoto H, et al. The novel compound TDN-345 induces synthesis/secretion of nerve growth factor in C6-10A glioma cells. Brain Res. 1997 Nov 7;774(1-2):87-93.
[2]. Nakayama T, et al. Beneficial effects of TDN-345, a novel Ca2+ antagonist, on ischemic brain injury and cerebral glucose metabolism in experimental animal models with cerebrovascular lesions. Brain Res. 1997 Jul 11;762(1-2):203-10.

Background

TDN345 is a Ca2+ antagonist, used for the treatment of vascular and senile dementia including Alzheimer's disease.

TDN-345 (10 μM) significantly increases the intracellular NGF content in the time-course

study. TDN-345 induces NGF synthesis/secretion at the concentrations of 0.1 μM; statistically significant at 1 μM. The ED50 is 0.88 μM[1].

TDN-345 (0.1-1.0 mg/kg, p.o.) dose-dependently decreases the mortality and ischemic neurological deficit score when administered orally twice, 60 min before ischemia and 90 min after recirculation. Additionally, TDN-345 (0.2 or 1.0 mg/kg, p.o. once daily for 3 weeks after the onset of stroke) decreases the mortality and recurrence of stroke in SHRSP[2].

[1]. Fukumoto H, et al. The novel compound TDN-345 induces synthesis/secretion of nerve growth factor in C6-10A glioma cells. Brain Res. 1997 Nov 7;774(1-2):87-93. [2]. Nakayama T, et al. Beneficial effects of TDN-345, a novel Ca2+ antagonist, on ischemic brain injury and cerebral glucose metabolism in experimental animal models with cerebrovascular lesions. Brain Res. 1997 Jul 11;762(1-2):203-10.

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