
Product Data Sheet

Product Name: CPI-1189
Cat. No.: GC14500

Chemical Properties

Cas. No. 183619-38-7

Chemical Name (Z)-N-(4-(tert-butylcarbamoyl)phenyl)acetimidic acid

SMILES C/C(O)=N/C1=CC=C(C=C1)C(NC(C)(C)C)=O

Formula $C_{13}H_{18}N_2O_2$ M.Wt 234.29

Solubility $\geq 23.4\text{mg/mL}$ in DMSO Storage Store at -20°C

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

Background

CPI-1189 is a proapoptotic cytokine tumor necrosis factor (TNF) alpha inhibitor.

AIDS dementia complex is characterized by increased gliosis, apoptosis, and oxidative stress in the CNS, as well as a compromised blood-brain barrier. TNF-alpha has been reported to be elevated in AIDS dementia complex brains and may contribute to AIDS dementia complex.

In vitro: CPI-1189 could potently inhibit p38-MAPK phosphorylation displaying protective action against tumor necrosis factor-alpha (TNFalpha)-induced neurodegeneration. Moreover, in primary astrocytes treated with interleukin 1beta, CPI-1189 inhibited p38-MAPK phosphorylation at low concentrations [1].

In vivo: To model elevated TNF-alpha in AIDS dementia complex, TNF-alpha was infused into rats. Results showed that the co-administration of CPI-1189 prevented TNF-alpha induced apoptosis. Both TNF-alpha and CPI-1189 treatment could suppress glial fibrillary

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acidic protein staining. TNF-alpha alone did not affect the integrity of the blood-brain barrier significantly, but CPI-1189 treatment increased blood-brain barrier integrity [2].

Clinical trial: Previous clinical study showed that CPI-1189 was well tolerated, with 91% of CPI-1189-treated subjects and 76% of placebo-treated subjects completing the trial. Skin rash was equally found in placebo and drug-treated arms. One subject developed a cataract on CPI-1189. CD4 lymphocyte counts and plasma HIV viral load remained stable in all groups throughout the trial [3].

References:

- [1] Hensley K,Robinson KA,Pye QN,Floyd RA,Cheng I,Garland WA,Irwin I. CPI-1189 inhibits interleukin 1beta-induced p38-mitogen-activated protein kinase phosphorylation: an explanation for its neuroprotective properties *Neurosci Lett*.2000 Mar 10;281(2-3):179-82.
- [2] Bjugstad KB,Flitter WD,Garland WA,Philpot RM,Kirstein CL,Arendash GW. CPI-1189 prevents apoptosis and reduces glial fibrillary acidic protein immunostaining in a TNF-alpha infusion model for AIDS dementia complex. *J Neurovirol*.2000 Dec;6(6):478-91.
- [3] Clifford DB,McArthur JC,Schifitto G,Kieburtz K,McDermott MP,Letendre S,Cohen BA,Marder K,Ellis RJ,Marra CM;Neurologic AIDS Research Consortium. A randomized clinical trial of CPI-1189 for HIV-associated cognitive-motor impairment. *Neurology*.2002 Nov 26;59(10):1568-73.

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