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# Data Sheet

Global Supplier of Chemical Probes, Inhibitors & Agonists.

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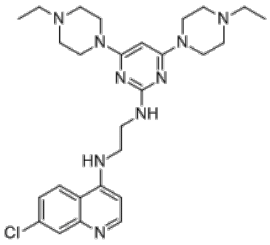
|---|---|---|
| **Product Name** | : | 4A7C-301 |
| **Cat. No.** | : | PC-21004 |
| **CAS No.** | : | |
| **Molecular Formula** | : | $C_{27}H_{38}ClN_9$ |
| **Molecular Weight** | : | 524.11 |
| **Target** | : | NURR1 (NR4A2) |
| **Solubility** | : | 10 mM in DMSO |



## Biological Activity

4A7C-301 is a potent, selective, brain-penetrant agonist of nuclear receptor **Nurr1** with EC50 of 6.53 uM, binds to Nurr1 ligand binding domain (LBD) with IC50 of 50 nM.
4A7C-301 shows higher potency than chloroquine (CQ), exhibits approximately 50 times higher potency than CQ in N27-A cells (EC50= ~0.2 and ~10 μM, respectively).
4A7C-301 selectively activates the transcriptional activity of Nurr1, but not Nur77, over Nor1.
4A7C-301 induces Nurr1's transcriptional activity with the greatest potency (13-14 fold) among NR4A members in SK-N-BE(2)C cells.
4A7C-301 restores Nurr1 protein expression levels that are diminished by exposure to environmental and genetic risk factors of PD in vitro.
4A7C-301 suppresses neuroinflammation in ventral mesencephalic (VM) neuron-glia co-cultures.
4A7C-301 restores autophagy against MPP+ in vitro.
4A7C-301 (5 mg/kg/day) 4A7C-301 protects midbrain dopamine neurons in the MPTP-induced male mouse model of PD and improves both motor and non-motor olfactory deficits without dyskinesia-like behaviors.
4A7C-301 also significantly ameliorates neuropathological abnormalities and improves motor and olfactory dysfunctions in AAV2-mediated α-synuclein-overexpressing male mouse models.

## References

Woori Kim, et al. ***Nat Commun.*** 2023 Jul 18;14(1):4283.



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