**NGB 2904 hydrochloride**

Cat. No.: HY-12697A  
CAS No.: 189061-11-8  
Molecular Formula: C_{28}H_{30}Cl_{3}N_{3}O  
Molecular Weight: 530.92  
Target: Dopamine Receptor  
Pathway: GPCR/G Protein; Neuronal Signaling  
Storage: Please store the product under the recommended conditions in the Certificate of Analysis.

**BIOLOGICAL ACTIVITY**

**Description**  
NGB 2904 hydrochloride is a potent, selective, orally active and brain-penetrated antagonist of dopamine D3 receptor, with a $K_{i}$ of 1.4 nM. NGB 2904 hydrochloride shows selectivity for D3 over D2, 5-HT2, $\alpha_1$, D4, D1 and D5 receptors ($K_{i}$s=217, 223, 642, >5000, >1000 and >10000 nM, respectively). NGB 2904 hydrochloride antagonizes Quinpirole-stimulated mitogenesis. NGB 2904 hydrochloride can inhibit Cocaine's rewarding effects and Cocaine-induced reinstatement of drug-seeking behavior\(^{[1]}\[2]\).

**IC$_{50}$ & Target**  
D$_3$ Receptor  
1.4 (Ki)

**In Vitro**  
NGB 2904 antagonizes Quinpirole (100 nM)-stimulated mitogenesis, with an IC$_{50}$ of 5.0 nM\(^{[1]}\). MCE has not independently confirmed the accuracy of these methods. They are for reference only.

**In Vivo**  
NGB 2904 (0.1-5 mg/kg; i.p. 30 min prior to test) attenuates Cocaine’s rewarding effects as assessed by PR self-administration, BSR, and Cocaine-triggered reinstatement of Cocaine-seeking behavior in rats\(^{[2]}\). NGB 2904 (26 μg/kg; a single s.c.) enhances amphetamine (26 mg/kg)-stimulated locomotion in wild-type mice\(^{[3]}\). NGB 2904 (0.026 μg-1 mg/kg; a single s.c. or once daily for 7 d) stimulates spontaneous locomotion in wild-type mice\(^{[3]}\). MCE has not independently confirmed the accuracy of these methods. They are for reference only.

<table>
<thead>
<tr>
<th>Animal Model:</th>
<th>Naive male Long-Evans rats (250-300g)(^{[2]})</th>
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<tbody>
<tr>
<td>Dosage:</td>
<td>0.1, 1, 5 mg/kg</td>
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<tr>
<td>Administration:</td>
<td>i.p. 30 min prior to test</td>
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| Result:       | Lowered the break-point for Cocaine (0.5 mg/kg; infusion) self-administration under progressive-ratio (PR) reinforcement.  
Inhibited the Cocaine (2 mg/kg; i.p.)-enhanced electrical brain stimulation reward (BSR).  
Inhibited Cocaine (10 mg/kg; i.p.)-triggered reinstatement of extinguished drug-seeking behavior. |

**REFERENCES**
