# OPC-14523 free base

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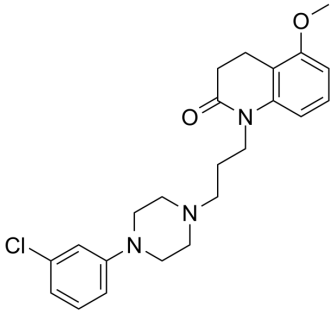
| **Cat. No.:** | HY-116594 |
| **CAS No.:** | 145969-30-8 |
| **Molecular Formula:** | $C_{23}H_{28}ClN_3O_2$ |
| **Molecular Weight:** | 413.94 |
| **Target:** | Sigma Receptor; 5-HT Receptor |
| **Pathway:** | GPCR/G Protein; Neuronal Signaling |
| **Storage:** | Please store the product under the recommended conditions in the Certificate of Analysis. |



## BIOLOGICAL ACTIVITY

**Description**

OPC-14523 free base is an orally active sigma and 5-HT1A receptor agonist, with high affinity for sigma receptors (σ1/2 $IC_{50}$ =47/56 nM), the 5-HT1A receptor ($IC_{50}$=2.3 nM), and the 5-HT transporter ($IC_{50}$=80 nM). OPC-14523 free base shows antidepressant-like activity[1][2].

**$IC_{50}$ & Target**

| sigma 1 | sigma 2 | 5-$HT_{1A}$ Receptor |
|---|---|---|
| 47 nM ($IC_{50}$) | 56 nM ($IC_{50}$) | 2.3 nM ($IC_{50}$) |

**In Vivo**

OPC-14523 free base (0.3-100 mg/kg; p.o.; daily for 0, 2, 4, 7 days) produces a marked antidepressant-like effect in the forced swimming test (FST) with rats and mice without affecting the general locomotor activity[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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| Animal Model: | Wistar strain of rats (140-245 g)[1] |
| Dosage: | 0.3-100 mg/kg |
| Administration: | P.o.; daily for 0, 2, 4, 7 days |
| Result: | A single doses of 1 mg/kg and higher of OPC-14523 reduced immobility time in the FST with an $ED_{50}$ value of 27 mg/kg. The $ED_{50}$ value for OPC-14523 on day 7 was 18 mg/kg. |

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| Animal Model: | ICR strain of mice (25-45 g)[1] |
| Dosage: | 0.3-100 mg/kg |
| Administration: | P.o.; daily for 0, 2, 4, 7 days |
| Result: | A single oral dose of OPC-14523 produced a marked reduction in immobility time during the FST at oral doses of 1 mg/kg and higher, with an $ED_{50}$ value of 20 mg/kg. The potency of OPC-14523 in decreasing immobility time was greater after treatment for seven consecutive days, producing an ED50 value of 2 mg/kg. |

## REFERENCES

[1]. Tottori K, et al. Antidepressant-like responses to the combined sigma and 5-HT1A receptor agonist OPC-14523. Neuropharmacology. 2001;41(8):976-988.

[2]. Bermack JE, et al. Effects of the potential antidepressant OPC-14523 [1-[3-[4-(3-chlorophenyl)-1-piperazinyl]propyl]-5-methoxy-3,4-dihydro-2-quinolinone monomethanesulfonate] a combined sigma and 5-HT1A ligand: modulation of neuronal activity in the dorsal raphe nucleus. J Pharmacol Exp Ther. 2004;310(2):578-583.



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