

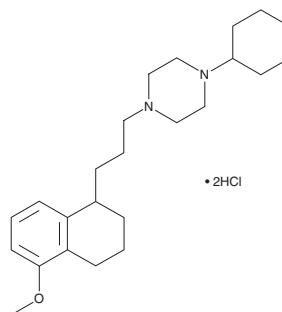
# PRODUCT INFORMATION



## PB 28 (hydrochloride)

Item No. 31742

**CAS Registry No.:** 172907-03-8  
**Formal Name:** 1-cyclohexyl-4-[3-(1,2,3,4-tetrahydro-5-methoxy-1-naphthalenyl)propyl]-piperazine, dihydrochloride  
**MF:** C<sub>24</sub>H<sub>38</sub>N<sub>2</sub>O • 2HCl  
**FW:** 443.5  
**Purity:** ≥98%  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

PB 28 (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the PB 28 (hydrochloride) in the solvent of choice, which should be purged with an inert gas. PB 28 (hydrochloride) is soluble in the organic solvent methanol. PB 28 (hydrochloride) is also soluble in water. We do not recommend storing the aqueous solution for more than one day.

### Description

PB 28 is a sigma ( $\sigma$ ) receptor ligand that binds to  $\sigma_1$  and  $\sigma_2$  receptors ( $K_i$ s = 13 and 0.28 nM, respectively, in MCF-7 cell membranes) with anticancer and antiviral activities.<sup>1,2</sup> It is selective for  $\sigma_1$  and  $\sigma_2$  receptors over human ether-a-go-go (hERG) channels ( $K_i$  = 1,000 nM).<sup>2</sup> PB 28 inhibits growth of MCF-7 and multidrug-resistant MCF-7/adr cells ( $IC_{50}$ s = 25 and 15 nM, respectively).<sup>1</sup> It also decreases basal P-glycoprotein (P-gp) levels in the same cells. PB 28 reduces severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infectivity in Vero E6 cells ( $IC_{90}$  = 278 nM), which is 20 times more potent than hydroxychloroquine (Item No. 17911).<sup>2</sup>

### References

1. Azzariti, A., Colabufo, N.A., Beradi, F., *et al.* Cyclohexylpiperazine derivative PB28, a  $\sigma_2$  agonist and  $\sigma_1$  antagonist receptor, inhibits cell growth, modulates P-glycoprotein, and synergizes with anthracyclines in breast cancer. *Mol. Cancer Ther.* **5**(7), 1807-1816 (2006).
2. Gordon, D.E., Jang, G.M., Bouhaddou, M., *et al.* A SARS-CoV-2 protein interaction map reveals targets for drug repurposing. *Nature* **583**(7816), 459-468 (2020).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

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#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897  
[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM