



<b>Catalog Number:</b>	MC11018	<b>Product Type:</b>	Small Molecule
<b>Bio-Activity:</b>	Sigma-2 agonist	<b>CAS #:</b>	172907-03-8
<b>Research Categories:</b>	Neuroscience	<b>Chemical Name:</b>	1-Cyclohexyl-4-[3-(1,2,3,4-tetrahydro-5-methoxy-1-naphthalenyl)propyl]piperazine, dihydrochloride
<b>Solubility:</b>	Soluble in DMSO (up to 25 mg/ml) or in Water (up to 5 mg/ml)	<b>Molecular Formula:</b>	C24H38N2O·2HCl
<b>Purity:</b>	> 98%	<b>Molecular Weight:</b>	443.5
<b>Format:</b>	Powder	<b>Ship Temp:</b>	Ambient
<b>Storage:</b>	-20°C		

### Application Notes

#### Description/Data:

PB28 is a potent, high affinity ( $K_i = 0.34 \text{ nM}$ )  $\sigma_2$  agonist (1). Its antiproliferative ( $EC_{50} \sim 0.4 \mu\text{M}$ ) and cytotoxic ( $EC_{50} \sim 12 \mu\text{M}$ ) impacts on glioma and neuroblastoma cell lines suggest it is also a  $\sigma_1$  antagonist (2). PB28 also stopped cell growth in MCF7 breast cancer lines, and was synergistic with doxorubicin (3). PB28 also inhibited Kv2.1 channels in a  $\sigma$ -independent manner, suggesting it may be seen in future Alzheimer's and diabetes research (4). Recently, PB28 showed potent ( $IC_{50} = 280 \text{ nM}$ ; 20-fold more than hydroxychloroquine) anti-SARS-CoV2 activity, without cardiac side effects (5,6).

#### References:

- 1) F Berardi et al. *J. Med. Chem.* 2004 47:2308
- 2) NA Colabufo et al. *Naunyn Schmiedebergs Arch. Pharmacol.* 2004 370:106
- 3) A Azzariti et al. *Mol. Cancer Ther.* 2006 5:1807
- 4) XY Liu et al. *Oncotarget* 2017 8:59345
- 5) DE Gordon et al. *Nature* 2020 583:459

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