

## Product Data Sheet

Product Name: DPTIP (hydrochloride)

Cat. No.: GC92004

### Chemical Properties

Cas. No. 2361799-64-4

Chemical Name 2,6-dimethoxy-4-[4-phenyl-5-(2-thienyl)-1H-imidazol-2-yl]-phenol, monohydrochloride

SMILES OC1=C(OC)C=C(C2=NC(C3=CC=CC=C3)=C(C4=CC=CS4)N2)C=C1OC.Cl

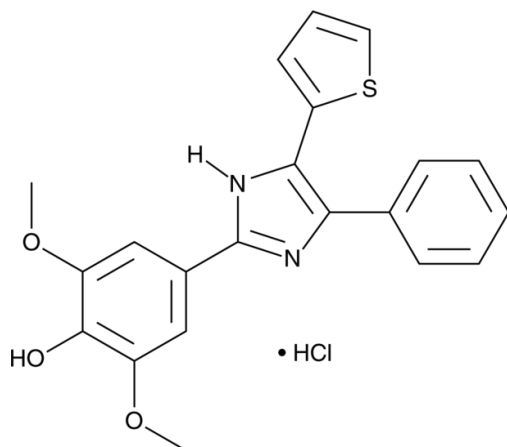
Formula  $C_{21}H_{18}N_2O_3S \cdot HCl$  M.Wt 414.9

Solubility Acetonitrile: Slightly Soluble: 0.1-1 mg/ml, DMSO: Sparingly Soluble: 1-10 mg/mL Storage -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure



### Background

DPTIP is an inhibitor of neutral sphingomyelinase 2 (nSMase2;  $IC_{50} = 30 \text{ nM}$ ).<sup>1</sup> It is selective for nSMase2 over alkaline phosphatase (ALP) and acid sphingomyelinase ( $IC_{50}s = >100 \text{ ?M}$  for both). DPTIP reduces viral yield in Vero and HeLa cells infected with West Nile virus ( $EC_{50}s = 0.26$  and

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2.81  $\mu$ M, respectively) or Zika virus ( $EC_{50}$ s = 1.56 and 1.84  $\mu$ M, respectively).<sup>2</sup> It inhibits the secretion of extracellular vesicles from primary mouse astrocytes activated by FBS withdrawal in a concentration-dependent manner and prevents serum deprivation-induced astrocyte activation in primary rat astrocytes when used at a concentration of 10  $\mu$ M.<sup>1</sup> DPTIP (10 mg/kg) reduces IL-1 $\beta$ -induced extracellular vesicle release from astrocytes and decreases neutrophil infiltration to the brain in a model of inflammation-induced brain injury using GFAP-GFP mice. It reduces hepatic levels of chemokine (C-C motif) ligand 2 (Ccl2), Tnf- $\alpha$ , Il-6, and Il-1 $\beta$  in the same model.

### References:

- [1]. Rojas, C., Barnaeva, E., Thomas, A.G., et al. DPTIP, a newly identified potent brain penetrant neutral sphingomyelinase 2 inhibitor, regulates astrocyte-peripheral immune communication following brain inflammation. *Sci. Rep.* 8:17715 (2018).
- [2]. Ivarez-Fernández, H., Mingo-Casas, P., Blázquez, A.B., et al. Allosteric inhibition of neutral sphingomyelinase 2 (nSMase2) by DPTIP: From antiviral activity to deciphering its binding site through in silico studies and experimental validation. *Int. J. Mol. Sci.* 23(22):13935 (2022).

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