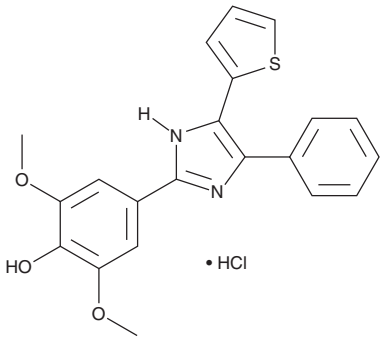
PRODUCT INFORMATION

DPTIP (hydrochloride)

Item No. 41681



CAS Registry No.:	2361799-64-4
Formal Name:	2,6-dimethoxy-4-[4-phenyl-5-(2-thienyl)-1H-imidazol-2-yl]-phenol, monohydrochloride
MF:	$C_{21}H_{18}N_2O_3S \bullet HCl$
FW:	414.9
Purity:	≥95%
Supplied as:	A 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

DPTIP (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the DPTIP (hydrochloride) in the solvent of choice, which should be purged with an inert gas. DPTIP (hydrochloride) is sparingly soluble (1-10 mg/ml) in DMSO and slightly soluble (0.1-1 mg/ml) in acetonitrile.

Description

DPTIP is an inhibitor of neutral sphingomyelinase 2 (nSMase2; IC_{50} = 30 nM).[1] It is selective for nSMase2 over alkaline phosphatase (ALP) and acid sphingomyelinase (IC_{50}s = >100 µM for both). DPTIP reduces viral yield in Vero and HeLa cells infected with West Nile virus (EC_{50}s = 0.26 and 2.81 µM, respectively) or Zika virus (EC_{50}s = 1.56 and 1.84 µM, respectively).[2] 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 µM.[1] DPTIP (10 mg/kg) reduces IL-1β-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-α, Il-6, and Il-1β 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. Álvarez-Fernández, H., Mingo-Casas, P., Blázquez, A.B., *et al.* Allosteric inhibition of neutral sphingomyelinase 2 (nSMase2) by DPTIP: From antiflaviviral 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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