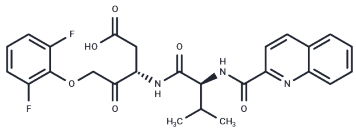
Data Sheet (Cat.No.T0282)

TargetMol
YOUR TARGET MOLECULES

Q-VD-OPH

Chemical Properties



CAS No. : 1135695-98-5

Formula: C26H25F2N3O6

Molecular Weight: 513.5

Appearance: no data available

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	Q-VD-OPH (Quinoline-Val-Asp-Difluorophenoxymethylketone) is a pan-caspase inhibitor with potent antiapoptotic properties.
Targets(IC50)	Caspase,HIV Protease
In vitro	Q-VD-OPh (5-100 μM) potently inhibits Actinomycin D-induced DNA laddering and subsequent apoptosis with minimal toxicity in WEHI 231 cells. Q-VD-OPh prevents caspase mediated cleavage of PARP and activation of the major initiator and effector caspases. [2] Q-VD-OPh protects cardiac myocytes from virus-induced apoptosis in vitro. [4]
In vivo	Q-VD-OPh inhibits caspase-1 activity, IL-18 protein expression, and neutrophil infiltration during ischemic ARF in mice. [3] In vivo, caspase inhibition by Q-VD-OPh provides protection from virus-induced myocardial injury, with a significant reduction in caspase-3 activity. [4] In TgCRND8 mice, Q-VD-OPh inhibits caspase-7 activation and limits the pathological changes associated with tau, including caspase cleavage. [5]
Kinase Assay	Enzyme assay is conducted in buffer containing 25 mM Tris, pH 8.0, 1 mM DTT, 1 mM spermine, 50 mM KCl, 0.01% Nonidet P-40, and 1 mM MgCl2. PARP reaction contains 0.1 μCi [3H]NAD+ (200?000 DPM), 1.5 μM NAD+, 150 nM biotinylated NAD+, 1 μg/mL activated calf thymus, and 1?5 nM PARP-1. Autoreactions utilizing SPA bead-based detection are carried out in 50 μL volumes in white 96-well plates. Compounds (e.g., MK-4827) are prepared in 11-point serial dilution in 96-well plate, 5 μL/well in 5% DMSO/Water (10× concentrated). Reactions are initiated by adding first 35 μL of PARP-1 enzyme in buffer and incubating for 5 min at room temperature and then 10 μL of NAD+ and DNA substrate mixture. After 3 h at room temperature, these reactions are terminated by the addition of 50 μL of streptavidin-SPA beads (2.5 mg/mL in 200 mM EDTA, pH 8). After 5 min, they are counted using a TopCount microplate scintillation counter. IC50 data is determined from inhibition curves at various substrate concentrations[1].
Cell Research	Caspase inhibitors are added at the indicated concentrations 30 minutes prior to the addition of apoptotic stimuli. Viability and cell number are determined by trypan blue exclusion from three random fields of greater than 200 cells/field. All experiments are performed a minimum of three times.(Only for Reference)

Solubility Information

Solubility	Ethanol: 100 mg/mL (194.75 mM), DMSO: 50 mg/mL (97.37 mM), (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.9474 mL	9.7371 mL	19.4742 mL
5 mM	0.3895 mL	1.9474 mL	3.8948 mL
10 mM	0.1947 mL	0.9737 mL	1.9474 mL
50 mM	0.0389 mL	0.1947 mL	0.3895 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Reference

Wu Z, Lin C, Zhang F, et al.TIGD1 Function as a Potential Cuproptosis Regulator Following a Novel Cuproptosis-Related Gene Risk Signature in Colorectal Cancer.Cancers.2023, 15(8): 2286.