

产品名称：  
**(3S)-5-(2,6-Difluorophenoxy)-3-[[[(2S)-3-methyl-1-oxo-2-[(2-quinolinylcarbonyl)amino]butyl]amino]-4-o**  
产品别名：**Q-VD-OPh**

生物活性：					
Description	Q-VD-OPh is an irreversible pan-caspase inhibitor with potent antiapoptotic properties; inhibits caspase 7 with an IC <sub>50</sub> of 48 nM and 25-400 nM for other caspases including caspase 1, 3, 8, 9, 10, and 12. Q-VD-OPh is able to cross the blood-brain barrier.				
IC <sub>50</sub> & Target	Caspase-7	Caspase-3	Caspase-1	Caspase-8	Caspase-9
	48 nM (IC <sub>50</sub> )	25-400 nM (IC <sub>50</sub> )	25-400 nM (IC <sub>50</sub> )	25-400 nM (IC <sub>50</sub> )	25-400 nM (IC <sub>50</sub> )
	Caspase-10	Caspase-12			
	25-400 nM (IC <sub>50</sub> )	25-400 nM (IC <sub>50</sub> )			
In Vitro	Q-VD-OPh is a potent inhibitor of caspase-7 with an IC <sub>50</sub> of 48 nM utilizing a cell-free assay consisting of human recombinant caspase-7, Q-VD-OPh, and the substrate AMC-DEVD-pNa[1]. Q-VD-OPh fully inhibits caspase-3 and -7 activity at 0.05 μM. Caspase-8 is also inhibited at low Q-VD-OPh concentrations. The cleavage of PARP-1 is fully prevented at 10 μM Q-VD-OPh. DNA fragmentation and disruption of the cell membrane functionality are both prevented at 2 μM Q-VD-OPh[2]. Q-VD-OPh is significantly more effective in preventing apoptosis than the widely used inhibitors, ZVAD-fmk and Boc-D-fmk, and is also equally effective in preventing apoptosis mediated by the three major apoptotic pathways, caspase 9/3, caspase 8/10, and caspase12. Q-VD-OPh is not toxic to cells even at extremely high concentrations[3]. QVD is also able to increase the expression of differentiation markers in acute myeloid leukemia (AmL) blasts. QVD alone or combined with VDDs increases differentiation and HPK1-cJun signaling in AmL cell context-dependent manner[4].				
In Vivo	Chronic treatment with Q-VD-OPh prevents caspase-7 activation and limits the pathological changes associated with tau, including caspase cleavage. Q-VD-OPh could be a potential therapeutic compound for the treatment of Alzheimer's disease[1].				
<div><div><div><div><div></div><div>Solvent</div><div>Mass</div><div>Concentration</div></div><div>Preparing</div><div>Stock Solutions</div></div><div><div>1 mg</div><div>5 mg</div><div>10 mg</div></div><div><div>1 mM</div><div>5 mM</div><div>10 mM</div><div>1.9475 mL</div><div>0.3895 mL</div><div>0.1947 mL</div><div>9.7373 mL</div><div>1.9475 mL</div><div>0.9737 mL</div><div>19.4746 mL</div><div>3.8949 mL</div><div>1.9475 mL</div></div></div></div> <div><p><b>In Vitro:</b></p><p><b>DMSO : 125 mg/mL (243.43 mM; Need ultrasonic)</b></p><p>*请根据产品在不同溶剂中的溶解度选择合适的溶剂配制储备液；一旦配成溶液，请分装保存，避免反复冻融造成的产品失效。</p><p>储备液的保存方式和期限：-80℃, 6 months; -20℃, 1 month。 -80℃ 储存时，请在 6 个月内使用， -20℃ 储存时，请在 1 个月内使用。</p><p><b>In Vivo:</b></p><p>请根据您的实验动物和给药方式选择适当的溶解方案。以下溶解方案都请先按照 <b>In Vitro</b> 方式配制澄清的储备液，再依次添加助溶剂：</p><p>——为保证实验结果的可靠性，澄清的储备液可以根据储存条件，适当保存；体内实验的工作液，建议您现用现配，当天使用； 以下溶剂前显示的百分比是指该溶剂在您配制终溶液中的体积占比；如在配制过程中出现沉淀、</p></div>					

<p><b>Solvent&amp;Solubility</b></p>	<p>析出现象，可以通过加热和/或超声的方式助溶</p> <p>1.请依序添加每种溶剂： 10% DMSO→40% PEG300 →5% Tween-80 → 45% saline</p> <p>Solubility: ≥ 2.08 mg/mL (4.05 mM); Clear solution</p> <p>此方案可获得 ≥ 2.08 mg/mL (4.05 mM, 饱和度未知) 的澄清溶液。</p> <p>以 1 mL 工作液为例，取 100 μL 20.8 mg/mL 的澄清 DMSO 储备液加到 400 μL PEG300 中，混合均匀；向上述体系中加入 50 μL Tween-80，混合均匀；然后继续加入 450 μL 生理盐水定容至 1 mL。</p> <p>2.请依序添加每种溶剂： 10% DMSO→ 90% (20% SBE-β-CD in saline)</p> <p>Solubility: ≥ 2.08 mg/mL (4.05 mM); Clear solution</p> <p>此方案可获得 ≥ 2.08 mg/mL (4.05 mM, 饱和度未知) 的澄清溶液。</p> <p>以 1 mL 工作液为例，取 100 μL 20.8 mg/mL 的澄清 DMSO 储备液加到 900 μL 20% 的 SBE-β-CD 生理盐水水溶液中，混合均匀。</p> <p>3.请依序添加每种溶剂： 10% DMSO →90% corn oil</p> <p>Solubility: ≥ 2.08 mg/mL (4.05 mM); Clear solution</p> <p>此方案可获得 ≥ 2.08 mg/mL (4.05 mM, 饱和度未知) 的澄清溶液，此方案不适用于实验周期在半个月以上的实验。</p> <p>以 1 mL 工作液为例，取 100 μL 20.8 mg/mL 的澄清 DMSO 储备液加到 900 μL 玉米油中，混合均匀。</p>
<p><b>References</b></p>	<p>[1]. Rohn TT, et al. Caspase activation in transgenic mice with Alzheimer-like pathology: results from a pilot study utilizing the caspase inhibitor, Q-VD-OPh. Int J Clin Exp Med. 2009 Nov 5;2(4):300-8.</p> <p>[2]. Kuzelová K, et al. Dose-dependent effects of the caspase inhibitor Q-VD-OPh on different apoptosis-related processes. J Cell Biochem. 2011 Nov;112(11):3334-42.</p> <p>[3]. Caserta TM, et al. Q-VD-OPh, a broad spectrum caspase inhibitor with potent antiapoptotic properties. Apoptosis. 2003 Aug;8(4):345-52.</p> <p>[4]. Chen-Deutsch X, et al. Leuk Res. 2012 Jul;36(7):884-8. The pan-caspase inhibitor Q-VD-OPh has anti-leukemia effects and can interact with vitamin D analogs to increase HPK1 signaling in AML cells.</p>
<p><b>实验参考：</b></p>	
<p><b>Animal Administration</b></p>	<p>Mouse: Stock solutions of Q-VD-OPh are prepared in DMSO and diluted in sterile PBS solution prior to injection. A final concentration of 10 mg/kg is chosen indicating neuroprotection at this concentration of Q-VD-OPh. Three-month old mice are divided into two groups: control, vehicle (n=3) or treated (n=2). Mice are injected i.p. three times a week with either Q-VD-OPh or vehicle for a total time period of 3 months[1].</p>
<p><b>References</b></p>	<p>[1]. Rohn TT, et al. Caspase activation in transgenic mice with Alzheimer-like pathology: results from a pilot study utilizing the caspase inhibitor, Q-VD-OPh. Int J Clin Exp Med. 2009 Nov 5;2(4):300-8.</p> <p>[2]. Kuzelová K, et al. Dose-dependent effects of the caspase inhibitor Q-VD-OPh on different apoptosis-related processes. J Cell Biochem. 2011 Nov;112(11):3334-42.</p> <p>[3]. Caserta TM, et al. Q-VD-OPh, a broad spectrum caspase inhibitor with potent antiapoptotic properties. Apoptosis. 2003 Aug;8(4):345-52.</p> <p>[4]. Chen-Deutsch X, et al. Leuk Res. 2012 Jul;36(7):884-8. The pan-caspase inhibitor Q-VD-OPh has anti-leukemia effects and can interact with vitamin D analogs to increase HPK1 signaling in AML cells.</p>