



碧云天网站



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Caspase 抑制剂 Z-VAD-FMK

| 产品编号 | 产品名称 | 包装 |
|--------------|---------------------|-------------|
| C1202-0.02ml | Caspase抑制剂Z-VAD-FMK | 20mM×0.02ml |
| C1202-0.1ml | Caspase抑制剂Z-VAD-FMK | 20mM×0.1ml |
| C1202-5mg | Caspase抑制剂Z-VAD-FMK | 5mg |

产品简介:

- Caspase抑制剂Z-VAD-FMK (Caspase Inhibitor Z-VAD-FMK)是一种可以穿透细胞膜的泛Caspase抑制剂(Cell permeable pan caspase inhibitor), 可以抑制由Caspase激活导致的细胞凋亡。
- 本Caspase抑制剂Z-VAD-FMK是一种不可逆的Caspase广谱抑制剂, 分子式为Z-Val-Ala-Asp-CH₂F, 即C₂₁H₂₈FN₃O₇, 分子量为453.5, 纯度>95%。
- Caspase抑制剂Z-VAD-FMK是一种最常用的细胞凋亡抑制剂, 常用于观察特定的细胞凋亡是否通过Caspase激活来介导。
- Caspase抑制剂Z-VAD-FMK不仅可以穿透细胞膜抑制细胞内的Caspase, 也可以用于抑制体外纯化或粗抽提的Caspase。
- 本Caspase抑制剂Z-VAD-FMK 20mM包装产品配制在DMSO中, 可以直接使用。5mg包装为粉末装。

包装清单:

| 产品编号 | 产品名称 | 包装 |
|--------------|---------------------|-------------|
| C1202-0.02ml | Caspase抑制剂Z-VAD-FMK | 20mM×0.02ml |
| C1202-0.1ml | Caspase抑制剂Z-VAD-FMK | 20mM×0.1ml |
| C1202-5mg | Caspase抑制剂Z-VAD-FMK | 5mg |
| — | 说明书 | 1份 |

保存条件:

-20°C保存, 一年有效。

注意事项:

- 如果每次使用量少, 使用次数较多, 请适当分装。反复冻融会影响本抑制剂的使用效果。
- 如果希望适当稀释后再分装保存, 请使用DMSO进行稀释。
- 本Caspase抑制剂Z-VAD-FMK在4°C、冰浴等较低温度情况下会凝固而粘在离心管管底、管壁或管盖内, 可以20-25°C水浴温育片刻至全部融解后使用。
- 本产品仅限于专业人员的科学研究用, 不得用于临床诊断或治疗, 不得用于食品或药品, 不得存放于普通住宅内。
- 为了您的安全和健康, 请穿实验服并戴一次性手套操作。

使用说明:

1. Caspase抑制剂Z-VAD-FMK在终浓度为20μM时可以非常显著地抑制大多数细胞凋亡诱导剂诱导的细胞凋亡。Caspase抑制剂Z-VAD-FMK抑制细胞凋亡的常见有效浓度范围为5-100μM。
2. Caspase抑制剂Z-VAD-FMK用于抑制细胞凋亡时至少需要和细胞凋亡诱导剂同时加入, 或者需在细胞凋亡诱导剂加入前10-30分钟加入到细胞培养液中, 或参考相关文献进行。
3. 如果用于抑制纯化或粗抽提的Caspase, 推荐Caspase抑制剂Z-VAD-FMK与待测样品预孵育10-20分钟, 再进行后续测定。

使用本产品的文献:

1. Deng T, Zhang Y. Possible involvement of activation of P53/P21 and demethylation of RUNX 3 in the cytotoxicity against Lovo cells induced by 5-Aza-2'-deoxycytidine. *Life Sci.* 2009 Feb 27;84(9-10):311-20.
2. Deng T, Zhang Y. 5-Aza-2'-deoxycytidine reactivates expression of RUNX3 by deletion of DNA methyltransferases leading to caspase independent apoptosis in colorectal cancer Lovo cells. *Biomed Pharmacother.* 2009 Aug;63(7):492-500.
3. Zhang J, Yan H, Wu YP, Li C, Zhang GY. Activation of GluR6-containing kainate receptors induces ubiquitin-dependent Bcl-2 degradation via denitrosylation in the rat hippocampus after kainate treatment. *J Biol Chem.* 2011 Mar 4;286(9):7669-80.
4. Peng YB, Zhou P, Chu C, Liu EH, et al. Proteomic Analysis for Malonylstragaloside I in U937 Leukemia Cells by Modified Label-free Quantitative Strategy with LC Chip Q-TOF MS/MS. *Chinese Journal of Natural Medicines.* 2011 Jul;9(4):305-316.
5. Sun X, Huo X, Luo T, Li M, Yin Y, Jiang Y. The anticancer flavonoid chrysin induces the unfolded protein response in hepatoma cells. *J Cell Mol Med.* 2011 Nov;15(11):2389-98.
6. Zhang Y, Zeng F, Liu X, Li Y, Zhou J, Huang Y, Wang Y, Zhou S, Zhu W, Shu E, Zhou G, Chen G. Chan-Yu-Bao-Yuan-Tang induces apoptosis in NSCLC and SCLC cell lines via a mitochondria-mediated pathway. *Xenobiotica.* 2011 Jul;41(7):593-602.
7. Wang D, Fang L, Li K, Zhong H, Fan J, Ouyang C, Zhang H, Duan E, Luo R, Zhang Z, Liu X, Chen H, Xiao S. Foot-and-mouth disease virus 3C protease cleaves NEMO to impair innate immune signaling. *J Virol.* 2012 Sep;86(17):9311-22.

8. Mao ZG, Zhou J, Wang H, He DS, Xiao WW, Liao GZ, Qiu LB, Zhu YH, Wang HJ. Artesunate inhibits cell proliferation and decreases growth hormone synthesis and secretion in GH3 cells. *Mol Biol Rep.* 2012 May;39(5):6227-34.
9. Song J, Shu L, Zhang Z, Tan X, Sun E, Jin X, Chen Y, Jia X. Reactive oxygen species-mediated mitochondrial pathway is involved in Baohuoside I-induced apoptosis in human non-small cell lung cancer. *Chem Biol Interact.* 2012 Jun 9;199(1):9-17.
10. Tang W, Zhang Y, Qian C, Yuan Z, Du J. Induction and mechanism of apoptosis by hydroxycamptothecin in human Tenon's capsule fibroblasts. *Invest Ophthalmol Vis Sci.* 2012 Jul 24;53(8):4874-80.
11. Khan M, Zheng B, Yi F, Rasul A, Gu Z, Li T, Gao H, Qazi Ji, Yang H, Ma T. Pseudolaric Acid B Induces Caspase-Dependent and Caspase-Independent Apoptosis in U87 Glioblastoma Cells. *Evid Based Complement Alternat Med.* 2012;2012:957568.
12. Zhu L, Yuan H, Guo C, Lu Y, Deng S, Yang Y, Wei Q, Wen L, He Z. Zearalenone induces apoptosis and necrosis in porcine granulosa cells via a caspase-3- and caspase-9-dependent mitochondrial signaling pathway. *J Cell Physiol.* 2012 May;227(5):1814-20.
13. Wang YQ, Wang L, Zhang MY, Wang T, Bao HJ, Liu WL, Dai DK, Zhang L, Chang P, Dong WW, Chen XP, Tao LY. Necrostatin-1 Suppresses Autophagy and Apoptosis in Mice Traumatic Brain Injury Model. *Neurochem Res.* 2012 Sep;37(9):1849-58.
14. Zhao WH, Gou BD, Zhang TL, Wang K. Lanthanum chloride bidirectionally influences calcification in bovine vascular smooth muscle cells. *J Cell Biochem.* 2012 May;113(5):1776-86.
15. Chen FH, Lu N, Zhang HW, Zhao L, He LC, Sun HP, You QD, Li ZY, Guo QL. LYG-202 augments tumor necrosis factor- α -induced apoptosis via attenuating casein kinase 2-dependent nuclear factor- κ B pathway in HepG2 cells. *Mol Pharmacol.* 2012 Nov;82(5):958-71.
16. Wang C, Zhang J, Wang Z, Razzaq M, Khan M. Vitexicarpin induces apoptosis-independent mitotic arrest in U87 glioblastoma cells. *African Journal of Pharmacy and Pharmacology.* 2012 Jul 8; 6(25):1874-1882.
17. Shen XJ, Wang HB, Ma XQ, Chen JH. β , β -Dimethylacrylshikonin induces mitochondria dependent apoptosis through ERK pathway in human gastric cancer SGC-7901 cells. *PLoS One.* 2012;7(7):e41773.
18. Wang Y, Zhu X, Yang Z, Zhao X. Honokiol induces caspase-independent paraptosis via reactive oxygen species production that is accompanied by apoptosis in leukemia cells. *Biochem Biophys Res Commun.* 2013 Jan 18;430(3):876-82.
19. Ma LS, Jiang CY, Cui M, Lu R, Liu SS, Zheng BB, Li L, Li X. Fluopirin C induces oncogenesis of human breast adenocarcinoma cells. *Acta Pharmacol Sin.* 2013;34:1093-1100.
20. Song XJ, Xia Y, Wang NY, Zhang LD, Shi XH, Xu YZ, Ye TH, Shi YJ, Zhu YX, Yu LT. A Novel Benzothiazole Derivative YLT322 Induces Apoptosis via the Mitochondrial Apoptosis Pathway In Vitro with Anti-Tumor Activity in Solid Malignancies. *PLoS One.* 2013 May 30;8(5):e63900.
21. Sun B, Cai Y, Li Y, Li J, Liu K, Li Y, Yang Y. The nonstructural protein NP1 of human bocavirus 1 induces cell cycle arrest and apoptosis in HeLa cells. *Virology.* 2013 May 25;440(1):75-83.
22. Li Y, Zhu H, Zeng X, Fan J, Qian X, Wang S, Wang Z, Sun Y, Wang X, Wang W, Ju D. Suppression of Autophagy Enhanced Growth Inhibition and Apoptosis of Interferon- β in Human Glioma Cells. *Mol Neurobiol.* 2013 Jun;47(3):1000-10.
23. Yang X, Ouyang H, Chen F, Pang D, Dong M, Yang S, Liu X, Peng Z, Wang F, Zhang X, Ren L. HMG-CoA reductase is negatively associated with PCV2 infection and PCV2-induced apoptotic cell death. *J Gen Virol.* 2014 Jun;95(Pt 6):1330-7.
24. Zhang Y, Ren X, Shi M, Jiang Z, Wang H, Su Q, Liu Q, Li G, Jiang G. Downregulation of STAT3 and activation of MAPK are involved in the induction of apoptosis by HNK in glioblastoma cell line U87. *Oncol Rep.* 2014 Aug 22;2038-2046.
25. Deng Q, Zhang Z, Feng X, Li T, Liu N, Lai J, Shuai L, Xiong Q, Fu C, Zou H, Wang Y, Li X, Ma K, Bie P. TRAIL-secreting mesenchymal stem cells promote apoptosis in heat-shock-treated liver cancer cells and inhibit tumor growth in nude mice. *Gene Ther.* 2014 Mar;21(3):317-27.
26. Teng Y, Gao M, Wang J, Kong Q, Hua H, Luo T, Jiang Y. Inhibition of eIF2 α dephosphorylation enhances TRAIL-induced apoptosis in hepatoma cells. *Cell Death Dis.* 2014 Feb 13;5:e1060.
27. Yu X, Wang H, Liu L. Two non-exclusive strategies employed to protect *Torulopsis glabrata* against hyperosmotic stress. *Appl Microbiol Biotechnol.* 2014 Apr;98(7):3099-110.
28. Gao X, Zhang H, Zhuang W, Yuan G, Sun T, Jiang X, Zhou Z, Yuan H, Zhang Z, Dong H. PEDF and PEDF-derived peptide 44mer protect cardiomyocytes against hypoxia-induced apoptosis and necroptosis via anti-oxidative effect. *Sci Rep.* 2014 Jul 11;4:5637.
29. Pan Q, Huang Y, Chen L, Gu J, Zhou X. SMAC-armed vaccinia virus induces both apoptosis and necroptosis and synergizes the efficiency of human telomerase in HCC. *Hum Cell.* 2014 Oct;27(4):162-71.
30. Di W, Khan M, Rasul A, Sun M, Sui Y, Zhong L, Yang L, Zhu Q, Feng L, Ma T. Isoalantolactone inhibits constitutive NF- κ B activation and induces reactive oxygen species-mediated apoptosis in osteosarcoma U2OS cells through mitochondrial dysfunction. *Oncol Rep.* 2014 Oct;32(4):1585-93.
31. Li R, Zhang L, Zhang L, Chen D, Tian J, Cao L, Zhang L. Capilliposide C derived from *Lysimachia capillipes* Hemsl inhibits growth of human prostate cancer PC3 cells by targeting caspase and MAPK pathways. *Int Urol Nephrol.* 2014 Jul;46(7):1335-44.
32. Sun M, Zhang N, Wang X, Cai C, Cun J, Li Y, Lv S, Yang Q. Nitidine chloride induces apoptosis, cell cycle arrest, and synergistic cytotoxicity with doxorubicin in breast cancer cells. *Tumour Biol.* 2014 Oct;35(10):10201-12.
33. Zhang Y, Song J, Zhang W, Liang R, Ma Y, Zhang L, Wei X, Ni J, Wang R. Functional properties of a novel hybrid antimicrobial peptide NS: potent antitumor activity and efficient plasmid delivery. *J Pept Sci.* 2014 Oct;20(10):785-93.
34. Zhou GZ, Yi YJ, Chen ZY, Zhang QY. Specific Cleavage of the Nucleoprotein of Fish Rhabdovirus. *Vet Pathol.* 2015 Nov;52(6):1258-62.
35. Song P, Ye L, Fan J, Li Y, Zeng X, Wang Z, Wang S, Zhang G, Yang P, Cao Z, Ju D. Asparaginase induces apoptosis and cytoprotective autophagy in chronic myeloid leukemia cells. *Oncotarget.* 2015 Feb 28;6(6):3861-73.
36. Li W, Jiang Z, Li T, Wei X, Zheng Y, Wu D, Yang L, Chen S, Xu B, Zhong M, Jiang J, Hu Y, Su H, Zhang M, Huang X, Geng S, Weng J, Du X, Liu P, Li Y, Liu H, Yao Y, Li P. Genome-wide analyses identify KLF4 as an important negative regulator in T-cell acute lymphoblastic leukemia through directly inhibiting T-cell associated genes. *Mol Cancer.* 2015 Feb 3;14:26.
37. Liu Y, He X, Sui Y, Yu R, Xu G. Transcription factor IKZF1 is degraded during the apoptosis of multiple myeloma cells induced by kinase inhibition. *FEBS Lett.* 2015 Aug 4;589(17):2233-40.
38. Song ZH, Yu HY, Wang P, Mao GK, Liu WX, Li MN, Wang HN, Shang YL, Liu C, Xu ZL, Sun QY, Li W. Germ cell-specific Atg7 knockout results in primary ovarian insufficiency in female mice. *Cell Death Dis.* 2015 Jan 15;6:e1589.
39. Wang HB, Ma XQ. β , β -Dimethylacrylshikonin induces mitochondria-dependent apoptosis of human lung adenocarcinoma cells in vitro via p38 pathway activation. *Acta Pharmacol Sin.* 2015 Jan;36(1):131-8.
40. Zhao LL, Liu YF, Peng LJ, Fei AM, Cui W, Miao SC, Hermine O, Gressin R, Khochbin S, Chen SJ, Wang J, Mi JQ. Arsenic trioxide rewires mantle cell lymphoma response to bortezomib. *Cancer Med.* 2015 Nov;4(11):1754-66.
41. Zhang X, Shang W, Yuan J, Hu Z, Peng H, Zhu J, Hu Q, Yang Y, Liu H, Jiang B, Wang Y, Li S, Hu X, Rao X. Positive Feedback Cycle of TNF α Promotes Staphylococcal Enterotoxin B-Induced THP-1 Cell Apoptosis. *Front Cell Infect Microbiol.* 2016 Sep 21;6:109.
42. Liu X, Ding S, Shi P, Dietrich R, Märtlbauer E, Zhu K. Non-hemolytic enterotoxin of *Bacillus cereus* induces apoptosis in Vero cells. *Cell Microbiol.* 2016 Oct 20. doi: 10.1111/cmi.12684. [Epub ahead of print]
43. Xing F, Zhan Q, He Y, Cui J, He S, Wang G. 1800MHz Microwave Induces p53 and p53-Mediated Caspase-3 Activation Leading to Cell Apoptosis In Vitro. *PLoS One.* 2016 Sep 30;11(9):e0163935.
44. He XY, Yuan LY, Li YT, Li M, Chen Y, Yuan H, Wu J, Guo CZ, Li J. Cytotoxic Responses and Apoptosis in Rat Kidney Epithelial Cells Exposed to Lead. *Biomed Environ Sci.* 2016 Jul;29(7):529-33.
45. Han YY, Tang JJ, Gao RF, Guo X, Lei M, Gao JM. A new semisynthetic 1-O-acetyl-6-O-lauroylbriannilactone induces apoptosis of human laryngocarcinoma cells through p53-dependent pathway. *Toxicol In Vitro.* 2016 Sep;35:112-20.
46. Li K, Yang W, Li Z, Jia W, Li J, Zhang P, Xiao T. Bitter apricot essential oil induces apoptosis of human HaCaT keratinocytes. *Int Immunopharmacol.* 2016 May;34:189-98.
47. Li K, Zhou R, Wang Jia W, Li Z, Li J, Zhang P, Xiao T. Zanthoxylum

bungeanum essential oil induces apoptosis of HaCaT human keratinocytes. *J Ethnopharmacol.* 2016 Jun 20;186:351-61.

48. Shi M, Ren X, Wang X, Wang H, Liu G, Yuan X, Zheng S, Yu L, Pan

S, Song G, Guo Q, Li L, Zhang X, Zhang Z, Ding H, Jiang G. A novel combination of oridonin and valproic acid in enhancement of apoptosis induction of HL-60 leukemia cells. *Int J Oncol.* 2016 Feb;48(2):734-46.

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