



碧云天生物技术/Beyotime Biotechnology
 订货热线: 400-168-3301或800-8283301
 订货e-mail: order@beyotime.com
 技术咨询: info@beyotime.com
 网址: http://www.beyotime.com

PDTC (NF-κB抑制剂/抗氧化剂)

产品编号	产品名称	包装
S1809	PDTC (NF-κB抑制剂/抗氧化剂)	5g

产品简介:

- PDTC的全称为Ammonium pyrrolidinedithiocarbamate或Pyrrolidinedithiocarbamic acid, ammonium salt, 是一种可以通透细胞膜的NF-κB活化(NF-κB activation)抑制剂, 可以在多种细胞中抑制NF-κB的激活。PDTC也是一种抗氧化剂(antioxidant), 也是一种金属离子螯合剂(metal chelator), 并且可以在酸性溶液中沉淀As, Bi, Cd, Co, Cu, Fe, Mn, Ni, Pb, Sb, Sn, V, Zn等重金属。PDTC可以诱导大鼠平滑肌细胞发生凋亡, 也可以抑制白血病细胞HL-60发生凋亡。
- PDTC分子量为164.29, 分子式为C₅H₉NS₂·NH₃, CAS Number: 5108-96-3。本产品为进口分装, 纯度大于99%。
- PDTC可溶于水(1mg/ml), 在DMSO中的溶解度可达到100mM。

包装清单:

产品编号	产品名称	包装
S1809	PDTC (NF-κB抑制剂/抗氧化剂)	5g
—	说明书	1份

保存条件:

4°C保存。配制成母液后-20°C可保存3个月。

注意事项:

- 本产品对人体有刺激性, 操作时请小心, 并注意适当防护以避免直接接触人体或吸入体内。
- 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. PDTC常见使用浓度范围为10-100μM。具体的最佳工作浓度请参考相关文献, 或根据实验目的, 以及所培养的特定细胞和组织, 通过实验进行摸索和优化。

使用本产品的文献:

1. Lai T, Wang K, Hou Q, Zhang J, Yuan J, Yuan L, You Z, Xi M. Interleukin 17 induces up-regulation of chemokine and cytokine expression via activation of the nuclear factor κB and extracellular signal-regulated kinase 1/2 pathways in gynecologic cancer cell lines. *Int J Gynecol Cancer*. 2011 Dec;21(9):1533-9.
2. Dang Li R, He Kong W, Ji Qin L, Ming Hua Z, Wen Cheng Z. ROS-induced ZNF580 expression: a key role for H₂O₂/NF-κB signaling pathway in vascular endothelial inflammation. *Mol Cell Biochem*. 2012 Jan; 359(1-2):183-91.
3. Li J, Liu H, Xing B, Yu Y, Wang H, Chen G, Gu B, Zhang G, Wei D, Gu P, Li M, Hu W. t-AUCB, an improved sEH inhibitor, suppresses human glioblastoma cell growth by activating NF-κB-p65. *J Neurooncol*. 2012 Jul;108(3):385-93.
4. Yang HY, Zhao L, Yang Z, Zhao Q, Qiang L, Ha J, Li ZY, You QD, Guo QL. Oroxylin A reverses multi-drug resistance of human hepatoma BEL7402/5-FU cells via downregulation of P-glycoprotein expression by inhibiting NF-κB signaling pathway. *Mol Carcinog*. 2012 Feb; 51(2):185-95.
5. Xiao LJ, Chen YY, Lin P, Zou HF, Lin F, Zhao LN, Li D, Guo L, Tang JB, Zheng XL, Yu XG. Hypoxia increases CX3CR1 expression via HIF-1 and NF-κB in androgen-independent prostate cancer cells. *Int J Oncol*. 2012 Nov;41(5):1827-36.
6. Cao ZH, Yin WD, Zheng QY, Feng SL, Xu GL, Zhang KQ. Caspase-3 is involved in IFN-γ- and TNF-α-Mediated MIN6 Cells Apoptosis via NF-κB/Bcl-2 Pathway. *Cell Biochem Biophys*. 2013 Dec;67(3):1239-48.
7. Fan H, Yan X, Zhang Y, Zhang X, Gao Y, Xu Y, Wang F, Meng S. Increased Expression of Gp96 by HBx-Induced NF-κB Activation Feedback Enhances Hepatitis B Virus Production. *PLoS One*. 2013 Jun 11;8(6):e65588.
8. Mou L, Kang Y, Zhou Y, Zeng Q, Song H, Wang R. Neurokinin-1 receptor directly mediates glioma cell migration by up-regulation of matrix metalloproteinase-2 (MMP-2) and membrane type 1-matrix metalloproteinase (MT1-MMP). *J Biol Chem*. 2013 Jan 4;288(1):306-18.
9. Zhang X, Ding R, Zhou Y, Zhu R, Liu W, Jin L, Yao W, Gao X. Toll-like receptor 2 and Toll-like receptor 4-dependent activation of B cells by a polysaccharide from marine fungus *Phoma herbarum* YS4108. *PLoS One*. 2013;8(3):e60781.
10. Zhao BX, Sun YB, Wang SQ, Duan L, Huo QL, Ren F, Li GF. Grape seed procyanidin reversal of p-glycoprotein associated multi-drug resistance via down-regulation of NF-κB and MAPK/ERK mediated YB-1 activity in A2780/T cells. *PLoS One*. 2013 Aug 15;8(8):e71071.
11. Yang C, Fu ZX. PEG-liposomal oxaliplatin combined with nuclear factor-κB inhibitor (PDTC) induces apoptosis in human colorectal cancer cells. *Oncol Rep*. 2014 Oct;32(4):1617-21.
12. Yao J, Hu R, Sun J, Lin B, Zhao L, Sha Y, Zhu B, You QD, Yan T, Guo QL. Oroxylin A prevents inflammation-related tumor through down-regulation of inflammatory gene expression by inhibiting NF-κB signaling. *Mol Carcinog*. 2014 Feb;53(2):145-58.
13. Shan X, Li Y, Meng X, Wang P, Jiang P, Feng Q. Curcumin and (-)-epigallocatechin-3-gallate attenuate acrylamide-induced proliferation in HepG2 cells. *Food Chem Toxicol*. 2014 Apr;66:194-202.
14. Zhang X, Shi Y, Weng Y, Lai Q, Luo T, Zhao J, Ren G, Li W, Pan H, Ke Y, Zhang W, He Q, Wang Q, Zhou R. The truncate mutation of Notch2 enhances cell proliferation through activating the NF-κB signal pathway in the diffuse large B-cell lymphomas. *PLoS One*. 2014 Oct 14;9(10):e108747.

15. Wei W, Yuan YH, Gao YN, Yan WF, Li CJ, Zhang DM, Chen NH. Polygalasaponin F inhibits secretion of inflammatory cytokines via NF- κ B pathway regulation. *J Asian Nat Prod Res.* 2014;16(8):865-75.
16. Zhou Y, Chen S, Ding R, Yao W, Gao X. Inflammatory modulation effect of glycopeptide from *Ganoderma capense* (Lloyd) Teng. *Mediators Inflamm.* 2014;2014:691285.
17. Zhao W, Ma G, Chen X. Lipopolysaccharide induced LOX-1 expression via TLR4/MyD88/ROS activated p38MAPK-NF- κ B pathway. *Vascul Pharmacol.* 2014 Dec;63(3):162-72.
18. Cheng X, Gu J, Zhang M, Yuan J, Zhao B, Jiang J, Jia X. Astragaloside IV inhibits migration and invasion in human lung cancer A549 cells via regulating PKC- α -ERK1/2-NF- κ B pathway. *Int Immunopharmacol.* 2014 Nov;23(1):304-13.
19. Lin D, Li L, Sun Y, Wang W, Wang X, Ye Y, Chen X, Xu Y. IL-17 regulates the expressions of RANKL and OPG in human periodontal ligament cells via TRAF6/TBK1-JNK/NF- κ B pathways. *Immunology.* 2014 Sep 29.
20. Ding CL, Xu G, Ren H, Zhao LJ, Zhao P, Qi ZT, Wang W. HCV infection induces the upregulation of miR-221 in NF- κ B dependent manner. *Virus Res.* 2015 Jan 22;196:135-9.
21. Wang L, Li G, Chen Q, Ke D. Octanoylated ghrelin attenuates angiogenesis induced by oxLDL in human coronary artery endothelial cells via the GHSR1a-mediated NF- κ B pathway. *Metabolism.* 2015 Oct;64(10):1262-71.
22. Zhu D, Wang H, Zhang J, Zhang X, Xin C, Zhang F, Lee Y, Zhang L, Lian K, Yan W, Ma X, Liu Y, Tao L. Irisin improves endothelial function in type 2 diabetes through reducing oxidative/nitrative stresses. *J Mol Cell Cardiol.* 2015 Oct;87:138-47.
23. Han X, Wang T, Zhang J, Liu X, Li Z, Wang G, Song Q, Pang D, Ouyang H, Tang X. Apolipoprotein CIII regulates lipoprotein-associated phospholipase A2 expression via the MAPK and NF κ B pathways. *Biol Open.* 2015 Apr 2;4(5):661-5.
24. Zhao Y, Zhang C, Huang Y, Yu Y, Li R, Li M, Liu N, Liu P, Qiao J. Up-regulated expression of WNT5a increases inflammation and oxidative stress via PI3K/AKT/NF- κ B signaling in the granulosa cells of PCOS patients. *J Clin Endocrinol Metab.* 2015 Jan;100(1):201-11.
25. Chen S, Yin L, Xu Z, An FM, Liu AR, Wang Y, Yao WB, Gao XD. Inhibiting receptor for advanced glycation end product (AGE) and oxidative stress involved in the protective effect mediated by glucagon-like peptide-1 receptor on AGE induced neuronal apoptosis. *Neurosci Lett.* 2015 Dec 8;612:193-8.
26. Song B, Bian Q, Shao CH, Li G, Liu AA, Jing W, Liu R, Zhang YJ, Zhou YQ, Hu XG, Jin G. Ulinastatin reduces the resistance of liver cancer cells to epirubicin by inhibiting autophagy. 2015 Mar 27;10(3):e0120694.
27. Jiang R, Wei L, Zhu M, Wu J, Wang L. Aspirin Inhibits LPS-Induced Expression of PI3K/Akt, ERK, NF- κ B, CX3CL1, and MMPs in Human Bronchial Epithelial Cells. *Inflammation.* 2015 Apr;39(2):643-50.
28. Liu H, Wang J, Wang J, Wang P, Xue Y. Paeoniflorin attenuates A β 1-42-induced inflammation and chemotaxis of microglia in vitro and inhibits NF- κ B- and VEGF/Flt-1 signaling pathways. *Brain Res.* 2015 Aug 27;1618:149-58.
29. Xu J, Jiang C, Zhu W, Wang B, Yan J, Min Z, Geng M, Han Y, Ning Q, Zhang F, Sun J, Meng L, Lu S. NOD2 pathway via RIPK2 and TBK1 is involved in the aberrant catabolism induced by T-2 toxin in chondrocytes. *Osteoarthritis Cartilage.* 2015 Sep;23(9):1575-85.
30. Jia B, Guo M, Li G, Yu D, Zhang X, Lan K, Deng Q. Hepatitis B virus core protein sensitizes hepatocytes to tumor necrosis factor-induced apoptosis by suppression of the phosphorylation of mitogen-activated protein kinase kinase 7. *J Virol.* 2015 Feb;89(4):2041-51.
31. Li Y, Wu Q, Deng Y, Lv H, Qiu J, Chi G, Feng H. D(-)-Salicin inhibits the LPS-induced inflammation in RAW264.7 cells and mouse models. *Int Immunopharmacol.* 2015 Jun;26(2):286-94.
32. Zhou X, Wang P, Michal JJ, Wang Y, Zhao J, Jiang Z, Liu B. Molecular characterization of the porcine S100A6 gene and analysis of its expression in pigs infected with highly pathogenic porcine reproductive and respiratory syndrome virus (HP-PRRSV). *J Appl Genet.* 2015 Aug;56(3):355-63.
33. Lu X, Ma P, Shi Y, Yao M, Hou L, Zhang P, Jiang L. NF- κ B increased expression of 17 β -hydroxysteroid dehydrogenase 4 promotes HepG2 proliferation via inactivating estradiol. *Mol Cell Endocrinol.* 2015 Feb 5;401:1-11.
34. Chen C, Gu S, Jiang X, Zhang Z. Nuclear translocation of nuclear factor kappa B is regulated by G protein signaling pathway in arsenite-induced apoptosis in HBE cell line. *Environ Toxicol.* 2016 Dec;31(12):1819-33.
35. Tang S, Xiang T, Huang S, Zhou J, Wang Z, Xie R, Long H, Zhu B. Ovarian cancer stem-like cells differentiate into endothelial cells and participate in tumor angiogenesis through autocrine CCL5 signaling. *Cancer Lett.* 2016 Jun 28;376(1):137-47.
36. Wang H, Zhao J, Xue G, Wang J, Wu J, Wang D, Dong L. Regulatory effect of cytokine-induced neutrophil chemoattractant, epithelial neutrophil-activating peptide 78 and pyrrolidine dithiocarbamate on pulmonary neutrophil aggregation mediated by nuclear factor- κ B in lipopolysaccharide-induced acute respiratory distress syndrome mice. *Exp Ther Med.* 2016 Sep;12(3):1785-1794.
37. Hua W, Zhang M, Wang Y, Yu L, Zhao T, Qiu X, Wang L. Mechanical stretch regulates microRNA expression profile via NF- κ B activation in C2C12 myoblasts. *Mol Med Rep.* 2016 Dec;14(6):5084-5092.
38. Wang B, Cui Z, Zhong Z, Sun Y, Yang GY, Sun Q, Bian L. The role and regulatory mechanism of IL-1 β on the methylation of the NF2 gene in benign meningiomas and leptomeninges. *Mol Carcinog.* 2016 Dec;55(12):2268-2277.
39. Zhang L, Zhao S, Yuan L, Wu H, Jiang H, Luo G, Zhao S. Knockdown of placental growth factor (PLGF) mitigates hyperoxia-induced acute lung injury in neonatal rats: Suppressive effects on NF κ B signaling pathway. *Int Immunopharmacol.* 2016 Sep;38:167-74.
40. Li Z, Wang S, Zhao W, Sun Z, Yan H, Zhu J. Oxidized low-density lipoprotein upregulates microRNA-146a via JNK and NF- κ B signaling. *Mol Med Rep.* 2016 Feb;13(2):1709-16.
41. Jiang R, Wei L, Zhu M, Wu J, Wang L. Aspirin Inhibits LPS-Induced Expression of PI3K/Akt, ERK, NF- κ B, CX3CL, and MMPs in Human Bronchial Epithelial Cells. *Inflammation.* 2016 Apr;39(2):643-50.
42. Chen S, Yin L, Xu Z, An FM, Liu AR, Wang Y, Yao WB, Gao XD. Inhibiting receptor for advanced glycation end product (AGE) and oxidative stress involved in the protective effect mediated by glucagon-like peptide-1 receptor on AGE induced neuronal apoptosis. *Neurosci Lett.* 2016 Jan 26;612:193-8.
43. Linghu K, Lin D, Yang H, Xu Y, Zhang Y, Tao L, Chen Y, Shen X. Ameliorating effects of 1,8-cineole on LPS-induced human umbilical vein endothelial cell injury by suppressing NF- κ B signaling in vitro. *Eur J Pharmacol.* 2016 Oct 15;789:195-201.
44. Yue X, Wu M, Jiang H, Hao J, Zhao Q, Zhu Q, Saren G, Zhang Y, Zhang X. Endothelial lipase is upregulated by interleukin-6 partly via the p38 MAPK and p65 NF- κ B signaling pathways. *Mol Med Rep.* 2016 Sep;14(3):1979-85.
45. Cao T, Shao S, Li B, Jin L, Lei J, Qiao H, Wang G. Up-regulation of Interferon-inducible protein 16 contributes to psoriasis by modulating chemokine production in keratinocytes. *Sci Rep.* 2016 May 3;6:25381.
46. Bai T, Yang Y, Yao YL, Sun P, Lian LH, Wu YL, Nan JX. Betulin alleviated ethanol-induced alcoholic liver injury via SIRT1/AMPK signaling pathway. *Pharmacol Res.* 2016 Mar;105:1-12.
47. Li Y, Chi G, Shen B, Tian Y, Feng H. Isorhamnetin ameliorates LPS-induced inflammatory response through downregulation of NF- κ B signaling. *Inflammation.* 2016 Aug;39(4):1291-301.
48. Liu L, Sun Q, Bao R, Roth M, Zhong B, Lan X, Tian J, He Q, Li D, Sun J, Yang X, Lu S. Specific regulation of PRMT1 expression by PIAS1 and RKIP in BEAS-2B epithelia cells and HFL-1 fibroblasts in lung inflammation. *Sci Rep.* 2016 Feb 25;6:21810.
49. Deng QF, Sun X, Liang ZF, Zhang ZQ, Yu DX, Zhong CY. Cigarette smoke extract induces the proliferation of normal human urothelial cells through the NF- κ B pathway. *Oncol Rep.* 2016 May;35(5):2665-72.
50. Wang G, Zhu L, Yu B, Chen K, Liu B, Liu J, Qin G, Liu C, Liu H, Chen K. Exopolysaccharide from *Trichoderma pseudokoningii* induces macrophage activation. *Carbohydr Polym.* 2016 Sep 20;149:112-20.
51. Qian T, Wang K, Cui J, He Y, Yang Z. Angiopoietin-Like Protein 7 Promotes an Inflammatory Phenotype in RAW264.7 Macrophages Through the p38 MAPK Signaling Pathway. *Inflammation.* 2016 Jun;39(3):974-85.
52. Han M, Song Y, Zhang X. Quercetin Suppresses the Migration and Invasion in Human Colon Cancer Caco-2 Cells Through Regulating Toll-like Receptor 4/Nuclear Factor-kappa B Pathway. *Pharmacogn Mag.* 2016 May;12(Suppl 2):S237-44.
53. Gan T, Wang Y, Zhao M, Wu J, Yang J, Peng S. 5-(Bis(3-(2-hydroxyethyl)-1H-indol-2-yl)methyl)-2-hydroxybenzoic acid (BHIMHA): showing a strategy of designing drug to block lung metastasis of tumors. *Drug Des Devel Ther.* 2016 Feb 16;10:711-21.
54. Zhang DM, Bao YL, Yu CL, Wang YM, Song ZB. Cripto-1 modulates

- macrophage cytokine secretion and phagocytic activity via NF- κ B signaling. *Immunol Res.* 2016 Feb;64(1):104-14.
55. Yuan X, Chen J, Dai M. Paeonol promotes microRNA-126 expression to inhibit monocyte adhesion to ox-LDL-injured vascularendothelial cells and block the activation of the PI3K/Akt/NF- κ B pathway. *Int J Mol Med.* 2016 Dec;38(6):1871-1878.
 56. Fu J, Shi Q, Song X, Xia X, Su C, Liu Z, Song E, Song Y. Tetrachlorobenzoquinone exhibits neurotoxicity by inducing inflammatory responses through ROS-mediated IKK/I κ B/NF- κ B signaling. *Environ Toxicol Pharmacol.* 2016 Jan;41:241-50.
 57. Hao W, Zhang X, Zhao W, Zhu H, Liu ZY, Lu J, Chen X. Cryptotanshinone Induces Pro-death Autophagy through JNK Signaling Mediated by Reactive OxygenSpecies Generation in Lung Cancer Cells. *Anticancer Agents Med Chem.* 2016;16(5):593-600.
 58. Li Y, Wang X, Ren J, Lan X, Li J, Yi J, Liu L, Han Y, Zhang S, Li D, Lu S. Identification and application of anti-inflammatory compounds screening system based on RAW264.7 cellsstably expressing NF- κ B-dependent SEAP reporter gene. *BMC Pharmacol Toxicol.* 2017 Jan 18; 18(1):5.
 59. Liu S, Zhao K, Su X, Lu L, Zhao H, Zhang X, Wang Y, Wu C, Chen J, Zhou Y, Hu X, Wang Y, Lu M, Chen X, Pei R. MITA/STING and Its Alternative Splicing Isoform MRP Restrict Hepatitis B Virus Replication. *PLoS One.* 2017 Jan 5;12(1):e0169701.
 60. Su AR, Qiu M, Li YL, Xu WT, Song SW, Wang XH, Song HY, Zheng N, Wu ZW. BX-795 inhibits HSV-1 and HSV-2 replication in a JNK/p38-dependent manner without interfering with PDK1activity. *Acta Pharmacol Sin.* 2017 Jan 23.doi: 10.1038/aps.2016.160. [Epub ahead of print]

Version 2016.12.12