



碧云天网站



微信公众号

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

## SP600125 (JNK抑制剂)

产品编号	产品名称	包装
S1876-5mg	SP600125 (JNK抑制剂)	5mg
S1876-25mg	SP600125 (JNK抑制剂)	25mg
S1876-100mg	SP600125 (JNK抑制剂)	100mg

### 产品简介:

- SP600125也称Anthrapyrazolone或1,9-Pyrazoloanthrone, 是一种常用的c-Jun N-terminal kinase (JNK)的高选择性抑制剂。对于JNK1和JNK2的IC<sub>50</sub>为40nM, 对于JNK3的IC<sub>50</sub>为90nM。对于JNK的选择性抑制比对于ERK1和p38-MAPK的抑制高300倍以上。在细胞中, SP600125可以显著抑制JNK介导的c-Jun磷酸化, 抑制IL-2、IFN- $\gamma$ 、TNF- $\alpha$ 和COX2等基因的表达。
- SP600125常用于JNK信号途径(JNK signaling pathway)的研究。
- SP600125的分子量为220.23, 分子式为C<sub>14</sub>H<sub>8</sub>N<sub>2</sub>O, CAS Number: 129-56-6。本产品纯度大于98%。
- 本产品为进口分装, 可以溶解于DMSO(溶解度约为15mg/ml), 不溶于水。溶解于DMSO配制成的储存液可以在-20度稳定保存2个月。

### 包装清单:

产品编号	产品名称	包装
S1876-5mg	SP600125 (JNK抑制剂)	5mg
S1876-25mg	SP600125 (JNK抑制剂)	25mg
S1876-100mg	SP600125 (JNK抑制剂)	100mg
—	说明书	1份

### 保存条件:

-20°C避光保存, 一年有效。

### 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. SP600125常见使用浓度范围为1-100 $\mu$ M, 最常见的使用浓度为10 $\mu$ M。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. Gao MQ, Guo SB, Chen XH, Du W, Wang CB. Molecular mechanisms of polypeptide from Chlamys farreri protecting HaCaT cells from apoptosis induced by UVA plus UVB. Acta Pharmacol Sin. 2007 Jul; 28(7):1007-14.
2. Shi X, Zhou B. The role of Nrf2 and MAPK pathways in PFOS-induced oxidative stress in zebrafish embryos. Toxicol Sci. 2010;115(2):391-400.
3. Lu X, Liu J, Hou F, Liu Z, Cao X, Seo H, Gao B. Cholesterol induces pancreatic  $\beta$  cell apoptosis through oxidative stress pathway. Cell Stress Chaperones. 2011 Sep;16(5):539-48.
4. Jin W, Li Q, Lin Y, Lu Y, Li H, Wang L, Hu R, Ma L, Wang J, Pang T. Reversal of Imatinib resistance in BCR-ABL-positive leukemia after inhibition of the Na<sup>+</sup>/H<sup>+</sup> exchanger. Cancer Lett. 2011 Sep 1; 308(1):81-90.
5. Xie H, Hua C, Sun L, Zhao X, Fan H, Dou H, Sun L, Hou Y. 17 $\beta$ -estradiol induces CD40 expression in dendritic cells via MAPK signaling pathways in aminochrome maintenance protein 6-dependent manner. Arthritis Rheum. 2011 Aug;63(8):2425-35.
6. Gong J, Shen XH, Chen C, Qiu H, Yang RG. Down-regulation of HIV-1 infection by inhibition of the MAPK signaling pathway. Virol Sin. 2011 Apr;26(2):114-22.
7. Huang X, Tong JS, Wang ZB, Yang CR, Qi ST, Guo L, Ouyang YC, Quan S, Sun QY, Qi ZQ, Huang RX, Wang HL. JNK2 participates in spindle assembly during mouse oocyte meiotic maturation. Microsc Microanal. 2011 Apr;17(2):197-205.
8. Li W, Liu Y, Li XX, Yu Y, Wu JJ, Wang Q, Huo H, Wang LM, Yang L. MAPKs are not involved in triptolide-induced cell growth inhibition and apoptosis in prostate cancer cell lines with different p53 status. Planta Med. 2011 Jan;77(1):27-31.
9. Liu L, Wang Y, Fan H, Zhao X, Liu D, Hu Y, Kidd AR 3rd, Bao J, Hou Y. MicroRNA-181a Regulates Local Immune Balance by Inhibiting Proliferation and Immunosuppressive Properties of Mesenchymal Stem Cells. Stem Cells. 2012 Aug;30(8):1756-70.
10. Ma J, Zhang L, Han W, Shen T, Ma C, Liu Y, Nie X, Liu M, Ran Y, Zhu D. Activation of JNK/c-Jun is required for the proliferation, survival, and angiogenesis induced by EET in pulmonary artery endothelial cells. J Lipid Res. 2012 Jun;53(6):1093-105.
11. 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 Jul 30;199(1):9-17.
12. Zhao X, Liu L, Liu D, Fan H, Wang Y, Hu Y, Hou Y. Progesterone Enhances Immunoregulatory Activity of Human Mesenchymal Stem

- Cells Via PGE2 and IL-6. *Am J Reprod Immunol.* 2012 Oct; 68(4):290-300.
13. Sun Z, Yu X, Wu W, Jia D, Chen Y, Ji L, Liu X, Peng X, Li Y, Yang L, Ruan Y, Gu J, Ren S, Zhang S. Fibroblast growth factor 7 inhibits cholesterol 7 $\alpha$ -hydroxylase gene expression in hepatocytes. *Biochem Biophys Res Commun.* 2012 Jul 13;423(4):775-80
  14. Zhong Y, Liu T, Guo Z. Curcumin inhibits ox-LDL-induced MCP-1 expression by suppressing the p38MAPK and NF- $\kappa$ B pathways in rat vascular smooth muscle cells. *Inflamm Res.* 2012 Jan;61(1):61-7.
  15. Zhong Y, Liu T, Lai W, Tan Y, Tian D, Guo Z. Heme oxygenase-1-mediated reactive oxygen species reduction is involved in the inhibitory effect of curcumin on lipopolysaccharide-induced monocyte chemoattractant protein-1 production in RAW264.7 macrophages. *Mol Med Rep.* 2013 Jan;7(1):242-6.
  16. Ye L, Shi Z, Liu H, Yang X, Wang K. GdCl<sub>3</sub> induced Hep G2 cell death through mitochondrial and external death pathways without significant elevation of ROS generation. *Biol Trace Elem Res.* 2013 Jan; 151(1):148-55.
  17. Zhao C, Yin P, Mei C, Li N, Yao W, Li X, Qi J, Fan K, Li Z, Wang L, Shi Y, Qiu S, Fan J, Zha X. Down-regulation of DNA methyltransferase 3B in staurosporine-induced apoptosis and its mechanism in human hepatocarcinoma cell lines. *Mol Cell Biochem.* 2013 Apr; 376(1-2):111-9.
  18. Hu X, Wang H, Liu J, Fang X, Tao K, Wang Y, Li N, Shi J, Wang Y, Ji P, Cai W, Bai X, Zhu X, Han J, Hu D. The role of ERK and JNK signaling in connective tissue growth factor induced extracellular matrix protein production and scar formation. *Arch Dermatol Res.* 2013 Jul;305(5):433-45.
  19. Wu X, Mi Y, Yang H, Hu A, Zhang Q, Shang C. The activation of HMGB1 as a progression factor on inflammation response in normal human bronchial epithelial cells through RAGE/JNK/NF- $\kappa$ B pathway. *Mol Cell Biochem.* 2013 Aug;380(1-2):249-57.
  20. Lv C, Sun W, Sun H, Wei S, Chen R, Wang B, Huang C. Asperolide A, a marine-derived tetranortriterpenoid, induces G2/M arrest in human NCI-H460 lung carcinoma cells, is mediated by p53-p21 stabilization and modulated by Ras/Raf/MEK/ERK signaling pathway. *Mar Drugs.* 2013 Jan 29;11(2):316-31.
  21. Liu Y, He G, Wang Y, Guan X, Pang X, Zhang B. MCM-2 is a therapeutic target of Trichostatin A in colon cancer cells. *Toxicol Lett.* 2013 Jul 31;221(1):23-30.
  22. Li HJ, Guo LM, Yang LL, Zhou YC, Zhang YJ, Guo J, Xie XJ, Guo GZ. Electromagnetic-pulse-induced activation of p38 MAPK pathway and disruption of blood-retinal barrier. *Toxicol Lett.* 2013 Jun 20; 220(1):35-43.
  23. Li B, Dong Z, Liu H, Xia YF, Liu XM, Luo BB, Wang WK, Li B, Gao F, Zhang C, Zhang MX, Zhang Y, An FS. Serum amyloid A stimulates lipoprotein-associated phospholipase A2 expression in vitro and in vivo. *Atherosclerosis.* 2013 Jun;228(2):370-9.
  24. 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.
  25. Zhang Z, Miao L, Lv C, Sun H, Wei S, Wang B, Huang C, Jiao B. Wentilactone B induces G2/M phase arrest and apoptosis via the Ras/Raf/MAPK signaling pathway in human hepatoma SMMC-7721 cells. *Cell Death Dis.* 2013 Jun 6;4:e657.
  26. Qiu M, Chen Y, Cheng L, Chu Y, Song HY, Wu ZW. Pyrrolidine Dithiocarbamate Inhibits Herpes Simplex Virus 1 and 2 Replication, and Its Activity May Be Mediated through Dysregulation of the Ubiquitin-Proteasome System. *J Virol.* 2013 Aug;87(15):8675-86.
  27. Wang Y, Yang Z, Meng Z, Cao H, Zhu G, Liu T, Wang X. Knockdown of TRPM8 suppresses cancer malignancy and enhances epirubicin-induced apoptosis in human osteosarcoma cells. *Int J Biol Sci.* 2013 Dec 22; 10(1):90-102.
  28. Kong Q, Hua H, Cui A, Shao T, Song P, Jiang Y. SP600125 induces Src and type I IGF receptor phosphorylation independent of JNK. *Int J Mol Sci.* 2014 Sep 15;15(9):16246-56.
  29. Liu RP, Zou M, Wang JY, Zhu JJ, Lai JM, Zhou LL, Chen SF, Zhang X, Zhu JH. Paroxetine ameliorates lipopolysaccharide-induced microglia activation via differential regulation of MAPK signaling. *J Neuroinflammation.* 2014 Mar 12;11:47.
  30. Jiang S, Zhao L, Lu Y, Wang M, Chen Y, Tao D, Liu Y, Sun H, Zhang S, Ma Y. Piwil2 inhibits keratin 8 degradation through promoting p38-induced phosphorylation to resist Fas-mediated apoptosis. *Mol Cell Biol.* 2014 Nov;34(21):3928-38.
  31. Xie J, Zhang S, Hu Y, Li D, Cui J, Xue J, Zhang G, Khachigian LM, Wong J, Sun L, Wang M. Regulatory roles of c-jun in H5N1 influenza virus replication and host inflammation. *Biochim Biophys Acta.* 2014 Dec;1842(12 Pt A):2479-88.
  32. Ren Y, Zheng J, Yao X, Weng G, Wu L. Essential role of the cGMP/PKG signaling pathway in regulating the proliferation and survival of human renal carcinoma cells. *Int J Mol Med.* 2014 Nov;34(5):1430-8.
  33. Xu L, Yu J, Zhai D, Zhang D, Shen W, Bai L, Cai Z, Yu C. Role of JNK Activation and Mitochondrial Bax Translocation in Allicin-Induced Apoptosis in Human Ovarian Cancer SKOV3 Cells. *Evid Based Complement Alternat Med.* 2014;2014:378684.
  34. Qi T, Zhang W, Luan Y, Kong F, Xu D, Cheng G, Wang Y. Proteomic profiling identified multiple short-lived members of the central proteome as the direct targets of the addicted oncogenes in cancer cells. *Mol Cell Proteomics.* 2014 Jan;13(1):49-62.
  35. Li Q, Huan T, Ye LJ, Li J, Shi JL, Huang QS. Concentration-dependent biphasic effects of resveratrol on human natural killer cells in vitro. *J Agric Food Chem.* 2014 Nov 12;62(45):10928-35.
  36. Zhu X, Zhang J, Sun H, Jiang C, Dong Y, Shan Q, Su S, Xie Y, Xu N, Lou X, Liu S. Ubiquitination of inositol-requiring enzyme 1 (IRE1) by the E3 ligase CHIP mediates the IRE1/TRAF2/JNK pathway. *J Biol Chem.* 2014 Oct 31;289(44):30567-77.
  37. Lan B, Wan YJ, Pan S, Wang Y, Yang Y, Leng QL, Jia H, Liu YH, Zhang CZ, Cao Y. Parthenolide induces autophagy via the depletion of 4E-BP1. *Biochem Biophys Res Commun.* 2015 Jan 2;456(1):434-9.
  38. Wang J, Zhang L, Zhang Y, Luo M, Wu Q, Yu L, Chu H. Transcriptional upregulation of HO-1 by EGF via the MAPKs/Nrf2 pathway in mouse C2C12 myoblasts. *Toxicol In Vitro.* 2015 Mar;29(2):380-8.
  39. He Q, Bao L, Zimering J, Zan K, Zhang Z, Shi H, Zu J, Yang X, Hua F, Ye X, Cui G. The protective role of (-)-epigallocatechin-3-gallate in thrombin-induced neuronal cell apoptosis and JNK-MAPK activation. *Neuroreport.* 2015 May 6;26(7):416-23.
  40. Hu WT, Huang LL, Li MQ, Jin LP, Li DJ, Zhu XY. Decidual stromal cell-derived IL-33 contributes to Th2 bias and inhibits decidual NK cell cytotoxicity through NF- $\kappa$ B signaling in human early pregnancy. *J Reprod Immunol.* 2015 Jun;109:52-65.
  41. Chen J, Jiang L, Lan K, Chen X. Celecoxib Inhibits the Lytic Activation of Kaposi's Sarcoma-Associated Herpesvirus through Down-Regulation of RTA Expression by Inhibiting the Activation of p38 MAPK. *Viruses.* 2015 May 5;7(5):2268-87.
  42. Lin X, Fang Q, Chen S, Zhe N, Chai Q, Yu M, Zhang Y, Wang Z, Wang J. Heme oxygenase-1 suppresses the apoptosis of acute myeloid leukemia cells via the JNK/c-JUN signaling pathway. *Leuk Res.* 2015 May;39(5):544-52.
  43. Li W, Li G, Zhang Y, Wei S, Song M, Wang W, Yuan X, Wu H, Yang Y. Role of P2 $\times$ 7 receptor in the differentiation of bone marrow stromal cells into osteoblasts and adipocytes. *Exp Cell Res.* 2015 Dec 10; 339(2):367-79.
  44. Mao Y, Wang B, Xu X, Du W, Li W, Wang Y. Glycyrrhizic Acid Promotes M1 Macrophage Polarization in Murine Bone Marrow-Derived Macrophages Associated with the Activation of JNK and NF- $\kappa$ B. *Mediators Inflamm.* 2015;2015:372931.
  45. Zhang Q, Yuan L, Zhang Q, Gao Y, Liu G, Xiu M, Wei X, Wang Z, Liu D. Resveratrol attenuates hypoxia-induced neurotoxicity through inhibiting microglial activation. *Int Immunopharmacol.* 2015 Sep; 28(1):578-87.
  46. Zheng X, Cheng M, Fu B, Fan X, Wang Q, Yu X, Sun R, Tian Z, Wei H. Targeting LUNX inhibits non-small cell lung cancer growth and metastasis. *Cancer Res.* 2015 Mar 15;75(6):1080-90.
  47. Qin Z, Feng J, Liu Y, Deng LL, Lu C. PDGF-D promotes dermal fibroblast invasion in 3-dimensional extracellular matrix via Snail-mediated MT1-MMP upregulation. *Tumour Biol.* 2016 Jan; 37(1):591-9.
  48. Wang B, Li F, Zhang C, Wei G, Liao P, Dong N. High-mobility group box-1 protein induces osteogenic phenotype changes in aortic valve interstitial cells. *J Thorac Cardiovasc Surg.* 2016 Jan;151(1):255-62.
  49. Tang J, Zhan L, Qin C. Inhibition of TLR8 Mediated Signaling Promotes BCG Induced Apoptosis in THP-1 Cells. *Microb Pathog.* 2016 Apr; 93:78-82.
  50. Li Q, Bao F, Zhi D, Liu M, Yan Q, Zheng X, Ren L, Cong S, Li Y, Cao G. Lipopolysaccharide induces SBD-1 expression via the P38 MAPK signaling pathway in ovine oviduct epithelial cells. *Lipids Health Dis.* 2016 Aug 11;15(1):127.

51. Lai JM, Zhang X, Liu FF, Yang R, Li SY, Zhu LB, Zou M, Cheng WH, Zhu JH. Redox-sensitive MAPK and Notch3 regulate fibroblast differentiation and activation: a dual role of ERK1/2. *Oncotarget*. 2016 Jul 12;7(28):43731-43745.
52. Wang Y, Cao J, Fan Y, Xie Y, Xu Z, Yin Z, Gao L, Wang C. Artemisinin inhibits monocyte adhesion to HUVECs through the NF- $\kappa$ B and MAPK pathways in vitro. *Int J Mol Med*. 2016 Jun;37(6):1567-75.
53. Lin X, Wu S, Wang Q, Shi Y, Liu G, Zhi J, Wang F. Saikosaponin-D Reduces H<sub>2</sub>O<sub>2</sub>-Induced PC12 Cell Apoptosis by Removing ROS and Blocking MAPK-Dependent Oxidative Damage. *Cell Mol Neurobiol*. 2016 Nov;36(8):1365-1375.
54. Li Z, Wang S, Zhao W, Sun Z, Yan H, Zhu J. Oxidized low-density lipoprotein upregulates microRNA-146a via JNK and NF- $\kappa$ B signaling. *Mol Med Rep*. 2016 Feb;13(2):1709-16.
55. Zhu J, Zheng Y, Zhang H, Sun H. Targeting cancer cell metabolism: The combination of metformin and 2-Deoxyglucose regulates apoptosis in ovarian cancer cells via p38 MAPK/JNK signaling pathway. *Am J Transl Res*. 2016 Nov 15;8(11):4812-4821.
56. Chen T, Wang Q, Li Y, Huang H, Hu W. Chinese herbal formula QHF inhibits liver cancer cell invasion and migration. *Exp Ther Med*. 2016 Jun;11(6):2413-2419.
57. Shi S, Zhang Y, Wen W, Zhao Y, Sun L. Molecular mechanisms of melatonin in the reversal of LPS-induced EMT in peritoneal mesothelial cells. *Mol Med Rep*. 2016 Nov;14(5):4342-4348.
58. Xu L, Zhang X, Li Y, Lu S, Lu S, Li J, Wang Y, Tian X, Wei JJ, Shao C, Liu Z. Neferine induces autophagy of human ovarian cancer cells via p38 MAPK/JNK activation. *Tumour Biol*. 2016 Jul;37(7):8721-9.
59. Chen L, Meng Y, Guo X, Sheng X, Tai G, Zhang F, Cheng H, Zhou Y. Gefitinib enhances human colon cancer cells to TRAIL-induced apoptosis of via autophagy- and JNK-mediated death receptors upregulation. *Apoptosis*. 2016 Nov;21(11):1291-1301.
60. Shen X, Guo Y, Qi J, Shi W, Wu X, Ju S. Binding of B-cell maturation antigen to B-cell activating factor induces survival of multiple myeloma cells by activating Akt and JNK signaling pathways. *Cell Biochem Funct*. 2016 Mar;34(2):104-10.
61. Xue LX, Xu ZH, Wang JQ, Cui Y, Liu HY, Liang WZ, Ji QY, He JT, Shao YK, Mang J, Xu ZX. Activin A/Smads signaling pathway negatively regulates Oxygen Glucose Deprivation-induced autophagy via suppression of JNK and p38 MAPK pathways in neuronal PC12 cells. *Biochem Biophys Res Commun*. 2016 Nov 18;480(3):355-361.
62. Geng H, Zhao L, Liang Z, Zhang Z, Xie D, Bi L, Wang Y, Zhang T, Cheng L, Yu D, Zhong C. Cigarette smoke extract-induced proliferation of normal human urothelial cells via the MAPK/AP-1 pathway. *Oncol Lett*. 2017 Jan;13(1):469-475.
63. Wang K, Zhang C, Bao J, Jia X, Liang Y, Wang X, Chen M, Su H, Li P, Wan JB, He C. Synergistic chemopreventive effects of curcumin and berberine on human breast cancer cells through induction of apoptosis and autophagic cell death. *Sci Rep*. 2016 Jun 6;6:26064.
64. Pan C, Xing JH, Zhang C, Zhang YM, Zhang LT, Wei SJ, Zhang MX, Wang XP, Yuan QH, Xue L, Wang JL, Cui ZQ, Zhang Y, Xu F, Chen YG. Aldehyde dehydrogenase 2 inhibits inflammatory response and regulates atherosclerotic plaque. *Oncotarget*. 2016 Jun 14;7(24):35562-35576.
65. Chen L, Meng Y, Sun Q, Zhang Z, Guo X, Sheng X, Tai G, Cheng H, Zhou Y. Ginsenoside compound K sensitizes human colon cancer cells to TRAIL-induced apoptosis via autophagy-dependent and -independent DR5 upregulation. *Cell Death Dis*. 2016 Aug 11;7(8):e2334.
66. Su J, Zhou H, Liu X, Nilsson J, Fredrikson GN, Zhao M. oxLDL antibody inhibits MCP-1 release in monocytes/macrophages by regulating Ca<sup>2+</sup>/K<sup>+</sup> channel flow. *J Cell Mol Med*. 2016 Dec 20. doi: 10.1111/jcmm.13033. [Epub ahead of print]
67. Zhang C, Jia X, Bao J, Chen S, Wang K, Zhang Y, Li P, Wan JB, Su H, Wang Y, Mei Z, He C. Polyphyllin VII induces apoptosis in HepG2 cells through ROS-mediated mitochondrial dysfunction and MAPK pathways. *BMC Complement Altern Med*. 2016 Feb 9;16:58.
68. Qin Z, Feng J, Liu Y, Deng LL, Lu C. PDGF-D promotes dermal fibroblast invasion in 3-dimensional extracellular matrix via Snail-mediated MT1-MMP upregulation. *Tumour Biol*. 2016 Jan;37(1):591-9.
69. Zhang C, Jia X, Wang K, Bao J, Li P, Chen M, Wan JB, Su H, Mei Z, He C. Polyphyllin VII Induces an Autophagic Cell Death by Activation of the JNK Pathway and Inhibition of PI3K/AKT/mTOR Pathway in HepG2 Cells. *PLoS One*. 2016 Jan 25;11(1):e0147405.
70. Ji M, Lu Y, Zhao C, Gao W, He F, Zhang J, Zhao D, Qiu W, Wang Y. C5a Induces the Synthesis of IL-6 and TNF- $\alpha$  in Rat Glomerular Mesangial Cells through MAPK Signaling Pathways. *PLoS One*. 2016 Sep 1;11(9):e0161867.
71. Li T, Zhao J, Ge J, Yang J, Song X, Wang C, Mao J, Zhang Y, Zou Y, Liu Y, Chen G. Particulate Matter Facilitates C6 Glioma Cells Activation and the Release of Inflammatory Factors Through MAPK and JAK2/STAT3 Pathways. *Neurochem Res*. 2016 Aug;41(8):1969-81.
72. Wang B, Li F, Zhang C, Wei G, Liao P, Dong N. High-mobility group box-1 protein induces osteogenic phenotype changes in aortic valve interstitial cells. *J Thorac Cardiovasc Surg*. 2016 Jan;151(1):255-62.
73. He LX, Tong X, Zeng J, Tu Y, Wu S, Li M, Deng H, Zhu M, Li X, Nie H, Yang L, Huang F. Paeonol Suppresses Neuroinflammatory Responses in LPS-Activated Microglia Cells. *Inflammation*. 2016 Dec;39(6):1904-1917.
74. Rui W, Guan L, Zhang F, Zhang W, Ding W. PM2.5-induced oxidative stress increases adhesion molecules expression in human endothelial cells through the ERK/AKT/NF- $\kappa$ B-dependent pathway. *J Appl Toxicol*. 2016 Jan;36(1):48-59.
75. Lv M, Xia YF, Li B, Liu H, Pan JY, Li BB, Zhang C, An FS. Serum amyloid A stimulates vascular endothelial growth factor receptor 2 expression and angiogenesis. *J Physiol Biochem*. 2016 Mar;72(1):71-81.
76. Su C, Shi Q, Song X, Fu J, Liu Z, Wang Y, Wang Y, Xia X, Song E, Song Y. Tetrachlorobenzoquinone induces Nrf2 activation via rapid Bach1 nuclear export/ubiquitination and JNK-P62 signaling. *Toxicology*. 2016 Jul 1;363-364:48-57.
77. Fu X, Xie FN, Dong P, Li QC, Yu GY, Xiao R. High-Dose Fluoride Impairs the Properties of Human Embryonic Stem Cells via JNK Signaling. *PLoS One*. 2016 Feb 9;11(2):e0148819.
78. Guo C, Yang L, Wan CX, Xia YZ, Zhang C, Chen MH, Wang ZD, Li ZR, Li XM, Geng YD, Kong LY. Anti-neuroinflammatory effect of Sophoraflavanone G from Sophora alopecuroides in LPS-activated BV2 microglia by MAPK, JAK/STAT and Nrf2/HO-1 signaling pathways. *Phytomedicine*. 2016 Dec 1;23(13):1629-1637.
79. 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.
80. Cui Y, Lu P, Song G, Liu Q, Zhu D, Liu X. Involvement of PI3K/Akt, ERK and p38 signaling pathways in emodin-mediated extrinsic and intrinsic human hepatoblastoma cell apoptosis. *Food Chem Toxicol*. 2016 Jun;92:26-37.
81. Zhou Y, Zhang S, Deng S, Dai C, Tang S, Yang X, Li D, Zhao K, Xiao X. ML-7 amplifies the quercetin-induced cell death through akt and MAPK-mediated apoptosis on HepG2 cell line. *Toxicol Mech Methods*. 2016;26(1):11-21.
82. Liu H, Xu W, Chang X, Qin T, Yin Y, Yang Q. 4,4'-diaponeurosporene, a C30 carotenoid, effectively activates dendritic cells via CD36 and NF- $\kappa$ B signaling in a ROS independent manner. *Oncotarget*. 2016 Jul 5;7(27):40978-40991.
83. Sun HY, Hu KZ, Yin ZS. Inhibition of the p38-MAPK signaling pathway suppresses the apoptosis and expression of proinflammatory cytokines in human osteoarthritis chondrocytes. *Cytokine*. 2017 Feb;90:135-143.
84. Ma T, Chen X, Ouyang H, Liu X, Ouyang T, Peng Z, Yang X, Chen F, Pang D, Bai J, Ren L. HMGCR inhibits the early stage of PCV2 infection, while PKC enhances the infection at the late stage. *Virus Res*. 2017 Feb 2;229:41-47.
85. Yin X, Zhou L, Han F, Han J, Zhang Y, Sun Z, Zhao W, Wang Z, Zheng L. Beta-adrenoceptor Activation by Norepinephrine Enhances Lipopolysaccharide-induced Matrix Metalloproteinase-9 Expression Through the ERK/JNK-c-Fos Pathway in Human THP-1 Cells. *J Atheroscler Thromb*. 2017 Jan 1;24(1):55-67.
86. Zhu Y, Jiang Y, Shi L, Du L, Xu X, Wang E, Sun Y, Guo X, Zou B, Wang H, Wang C, Sun L, Zhen Y. 7-O-Geranylquercetin induces apoptosis in gastric cancer cells via ROS-MAPK mediated mitochondrial signaling pathway activation. *Biomed Pharmacother*. 2017 Jan 8;87:527-538.
87. 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 PDK1 activity. *Acta Pharmacol Sin*. 2017 Jan 23. doi: 10.1038/aps.2016.160. [Epub ahead of print]
88. Li Y, Hu N, Yang D, Oxenkrug G, Yang Q. Regulating the balance between the kynurenine and serotonin pathways of tryptophan metabolism. *FEBS J*. 2017 Jan 24. doi: 10.1111/febs.14026. [Epub ahead of print]

89. Xu Y, Zhao Y, Xu Y, Guan Y, Zhang X, Chen Y, Wu Q, Zhu G, Chen Y, Sun F, Wang J, Yu Y. Blocking inhibition to YAP by ActinomycinD enhances anti-tumor efficacy of Corosolic acid in treating livercancer. *Cell Signal*. 2017 Jan;29:209-217.
90. You F, Li Q, Jin G, Zheng Y, Chen J, Yang H. Genistein protects against

A $\beta$ 25-35 induced apoptosis of PC12 cells through JNK signaling and modulation of Bcl-2 family messengers. *BMC Neurosci*. 2017 Jan 12;18(1):12.

Version 2016.12.12