



碧云天生物技术/Beyotime Biotechnology  
 订货热线: 400-1683301或800-8283301  
 订货e-mail: order@beyotime.com  
 技术咨询: info@beyotime.com  
 网址: http://www.beyotime.com

## 磷酸钙法细胞转染试剂盒

产品编号	产品名称	包装
C0508	磷酸钙法细胞转染试剂盒	>200次

### 产品简介:

- 碧云天生产的磷酸钙法细胞转染试剂盒(Calcium Phosphate Cell Transfection Kit), 在传统的磷酸钙细胞转染方法的基础上进行了改良, 提高了转染效率, 并降低了毒性。用磷酸钙法转染细胞, 不仅可以瞬时表达, 也可以筛选稳定株。
- HEK293或HEK293T细胞, 即通常所谓的293细胞, 是最适合磷酸钙法转染的细胞之一, 优化条件后转染效率可以高达90%以上; 通常很容易达到40-50%左右的转染效率。大多数常见的细胞例如Hela细胞、CHO细胞等也都适合磷酸钙法转染, 但效率比293细胞要略低一些。
- 本试剂盒不仅适合于大多数贴壁细胞的转染, 也适用于一些悬浮细胞的转染。
- 本试剂盒提供的试剂都经无菌处理, 可以直接使用。
- 关于不同的细胞转染试剂的主要特点和差异方面的比较, 以及如何选择适当的细胞转染试剂, 可参考碧云天的相关网页: <http://www.beyotime.com/support/transfection.htm>。
- 本试剂盒足够转染不少于200个细胞样品。

### 包装清单:

产品编号	产品名称	包装
C0508-1	BBS溶液	20ml
C0508-2	氯化钙溶液	20ml
—	说明书	1份

### 保存条件:

-20°C保存, 一年有效。

### 注意事项:

- 转染时, 把DNA-氯化钙溶液加入到BBS溶液中, 不要把BBS溶液加入到DNA-氯化钙溶液中。
- 高纯度的质粒是获得高转染效率的必要条件, 要确保A260/A280大于1.8, 并且电泳检测抽提到的质粒90%以上都是超螺旋。
- 在用磷酸钙法转染细胞时应使用浓度不高于5%的二氧化碳, 二氧化碳的最佳浓度为3%左右。
- BBS溶液的pH值直接关系到转染效率, 尽量避免把BBS溶液长时间暴露在空气中, 以免被空气中的二氧化碳酸化。
- 转染时由于质粒不同、细胞不同, 最佳的质粒用量需自行摸索。
- 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. 对于贴壁细胞:

- 将细胞培养于培养皿或培养板内, 通常在铺板后1-2天内长到70-80%满为宜。后续说明都按6孔板内一个孔进行说明, 如果有更多个孔或大小不相同的培养器皿, 请自行换算。
- 在转染前30-60分钟, 吸去细胞培养液, 加入新鲜的不含抗生素的完全培养液2毫升。**注意:** 转染时最好使用新鲜配制且pH值经过精心调校的培养液; 转染用的培养液可以在配制后分装冻存, 使用时再解冻。
- 取2-6微克待转染的质粒DNA (质粒总体积不宜超过20微升), 加入到100微升氯化钙溶液中, 混匀。
- 把DNA-氯化钙溶液加入到100微升BBS溶液中, 混匀, 室温孵育10-20分钟。此时不会产生可见的沉淀。
- 把DNA-氯化钙-BBS混合物均匀滴加到整个6孔板内。在含5%二氧化碳的37°C细胞培养箱内培养。
- 根据实验要求和磷酸钙对于不同细胞的毒性不同, 在4-16小时后轻轻晃动培养板数次以充分悬浮一些磷酸钙沉淀, 吸去含磷酸钙沉淀的培养液, 加入2毫升新鲜的完全培养液, 继续培养。
- 通常在转染约24小时后就可以检测到转染基因的表达。

#### 2. 对于悬浮细胞:

- 离心收集悬浮细胞, 用PBS洗涤一次。
- 按照上面的步骤c)和d)制备DNA-氯化钙-BBS混合物。
- 每10<sup>6</sup>个细胞的沉淀, 用100微升DNA-氯化钙-BBS混合物重新悬浮, 室温放置20分钟。

- d. 在一个6孔板孔内加入2毫升完全培养液，然后加入来自上一步的细胞-DNA-氯化钙-BBS混合物，混匀。
- e. 在含5%二氧化碳的37°C细胞培养箱内培养。
- f. 根据实验要求和磷酸钙对于不同细胞的毒性不同，在4-16小时后离心收集细胞，用PBS洗一次，然后用2毫升完全培养液重新悬浮细胞，继续培养。
- g. 通常在转染约24小时后就可以检测到转染基因的表达。

## 使用本产品的文献：

1. Deng HP, Zhuang R, Jia W, Zhang Y, Zhang Y, Hu Y, Zhang XH, Jin BQ. Construction and expression of human CD226 extracellular domain 1 and domain 2 gene eukaryotic expression vectors and identification of the fusion proteins. *Immunological journal*. 2007 Sep;23(5).
2. Shi JF, Li A, Rao GZ, Li Q. Construction of the recombinant adeno-associated viral vector of hBM P-7 and transfection of dental pulp cells. *Shaanxi Journal of Medicine*. 2008 Jan;37(1).
3. Zheng LH, Bao YL, Wu Y, Yu CL, Meng X, Li YX. Cantharidin reverses multidrug resistance of human hepatoma HepG2/ADM cells via down-regulation of P-glycoprotein expression. *Cancer Lett*. 2008 Dec 8;272(1):102-9.
4. Yang H, Chen J, Yang G, Zhang XH, Liu R, Xue X. Protection of Japanese flounder (*Paralichthys olivaceus*) against *Vibrio anguillarum* with a DNA vaccine containing the mutated zinc-metalloprotease gene. *Vaccine*. 2009 Mar 26;27(15):2150-5.
5. Yang N, Gong F, Sun L, Yang D, Han X, Ma C, Sun Y. Poly (ADP-ribose) polymerase-1 binds to BCL2 major breakpoint region and regulates BCL2 expression. *J Cell Biochem*. 2010 Aug 1;110(5):1208-18.
6. Liu R, Chen J, Li K, Zhang X. Identification and evaluation as a DNA vaccine candidate of a virulence-associated serine protease from a pathogenic *Vibrio parahaemolyticus* isolate. *Fish Shellfish Immunol*. 2011 Jun;30(6):1241-8.
7. Song ZB, Bao YL, Zhang Y, Mi XG, Wu P, Wu Y, Yu CL, Sun Y, Zheng LH, Huang YX, Liu B, Li YX. Testes-specific protease 50 (TSP50) promotes cell proliferation through the activation of the nuclear factor  $\kappa$ B (NF- $\kappa$ B) signalling pathway. *Biochem J*. 2011 Jun 1;436(2):457-67.
8. Sun BT, Zheng LH, Bao YL, Yu CL, Wu Y, Meng XY, Li YX. Reversal effect of Dioscin on multidrug resistance in human hepatoma HepG2/adriamycin cells. *Eur J Pharmacol*. 2011 Mar 5;654(2):129-34.
9. Shi Y, Bao YL, Wu Y, Yu CL, Huang YX, Sun Y, Zheng LH, Li YX. Alantolactone inhibits cell proliferation by interrupting the interaction between Cripto-1 and activin receptor type II A in activin signaling pathway. *J Biomol Screen*. 2011 Jun;16(5):525-35.
10. Cao X, Deng W, Wei Y, Su W, Yang Y, Wei Y, Yu J, Xu X. Encapsulation of plasmid DNA in calcium phosphate nanoparticles: stem cell uptake and gene transfer efficiency. *Int J Nanomedicine*. 2011;6:3335-49.
11. Zhong XY, Yu JH, Zhang WG, Wang ZD, Dong Q, Tai S, Cui YF, Li H. MicroRNA-421 functions as an oncogenic miRNA in biliary tract cancer through down-regulating farnesoid X receptor expression. *Gene*. 2012 Feb 1;493(1):44-51.
12. Zhou R, Yao X, Xu X, Wang G, Zhu Z, Chen J, Chen L, Shen X. Blockage of progesterone receptor effectively protects pancreatic islet beta cell viability. *Steroids*. 2013 Oct;78(10):987-95.
13. Wang L, Hou Y, Quan H, Xu W, Bao Y, Li Y, Fu Y, Zou S. A compound-based computational approach for the accurate determination of hot spots. *Protein Sci*. 2013 Aug;22(8):1060-70.
14. Qin L, Sun Y, Liu P, Wang Q, Han B, Duan Y. F127/Calcium phosphate hybrid nanoparticles: a promising vector for improving siRNA delivery and gene silencing. *J Biomater Sci Polym Ed*. 2013;24(15):1757-66.
15. Zhuang J, Zhang H, Zhou R, Chen L, Chen J, Shen X. Regulation of prostaglandin F2 $\alpha$  against  $\beta$  amyloid clearance and its inflammation induction through LXR/RXR heterodimer antagonism in microglia. *Prostaglandins Other Lipid Mediat*. 2013 Oct;106:45-52.
16. Zhang WG, Chen L, Dong Q, He J, Zhao HD, Li FL, Li H. Mmu-miR-702 functions as an anti-apoptotic mirtron by mediating ATF6 inhibition in mice. *Gene*. 2013 Dec 1;531(2):235-42.
17. Zhou R, Lin ZH, Jiang CS, Gong JX, Chen LL, Guo YW, Shen X. Marine natural product des-O-methylasiopodol effectively lowers the blood glucose level in db/db mice via ameliorating inflammation. *Acta Pharmacol Sin*. 2013 Oct;34(10):1325-36.
18. Mi XG, Song ZB, Wu P, Zhang YW, Sun LG, Bao YL, Zhang Y, Zheng LH, Sun Y, Yu CL, Wu Y, Wang GN, Li YX. Alantolactone induces cell apoptosis partially through down-regulation of testes-specific protease 50 expression. *Toxicol Lett*. 2014 Jan 30;224(3):349-55.
19. Yang P, Li Z, Fu R, Wu H, Li Z. Pyruvate kinase M2 facilitates colon cancer cell migration via the modulation of STAT3 signalling. *Cell Signal*. 2014 Sep;26(9):1853-62.
20. Song ZB, Liu B, Li YY, Wu P, Bao YL, Huang YX, Wu Y, Sun LG, Yu CL, Sun Y, Zheng LH, Li YX. The catalytic triad of testes-specific protease 50 (TSP50) is essential for its function in cell proliferation. *Cell Signal*. 2014 Oct;26(10):2266-75.
21. Han L, Wang W, Lu J, Kong F, Ma G, Zhu Y, Zhao D, Zhu J, Shuai W, Zhou Q, Chen P, Ye L, Tao J, Ahmad S, Li F, Sun J. AAV-sBTLA facilitates HSP70 vaccine-triggered prophylactic antitumor immunity against a murine melanoma pulmonary metastasis model in vivo. *Cancer Lett*. 2014 Nov 28;354(2):398-406.
22. Tan H, Wang W, Yin X, Li Y, Yin R. Identification of a selective glucocorticoid receptor ligand for the treatment of chronic inflammation in type 2 diabetes mellitus. *Exp Ther Med*. 2014 Oct;8(4):1111-1114.
23. Sun Y, Fan J, Zhu Z, Guo X, Zhou T, Duan W, Shen X. Small molecule TBTC as a new selective retinoid X receptor  $\alpha$  agonist improves behavioral deficit in Alzheimer's disease model mice. *Eur J Pharmacol*. 2015 Sep 5;762:202-13.
24. Li X, Guo L, Zhou X, Gao X, Liang P. miRNAs regulated overexpression of ryanodine receptor is involved in chlorantraniliprole resistance in *Plutellaxylostella* (L.). *Sci Rep*. 2015 Sep 15;5:14095.
25. Song C, Wang J, Mo C, Mu S, Jiang X, Li X, Zhong S, Zhao Z, Zhou G. Use of Ferritin Expression, Regulated by Neural Cell-Specific Promoters in Human Adipose Tissue-Derived Mesenchymal Stem Cells, to Monitor Differentiation with Magnetic Resonance Imaging In Vitro. *PLoS One*. 2015 Jul 15;10(7):e0132480.
26. Hu K, Gu Y, Lou L, Liu L, Hu Y, Wang B, Luo Y, Shi J, Yu X, Huang H. Galectin-3 mediates bone marrow microenvironment-induced drug resistance in acute leukemia cells via Wnt/ $\beta$ -catenin signaling pathway. *J Hematol Oncol*. 2015 Jan 27;8:1.
27. Cheng Y, Zhou M, Wang Y. Arctigenin antagonizes mineralocorticoid receptor to inhibit the transcription of Na/K-ATPase. *J Recept Signal Transduct Res*. 2015 Oct 8:1-8.
28. Meng SF, Mao WP, Wang F, Liu XQ, Shao LL. The relationship between Cd-induced autophagy and lysosomal activation in WRL-68 cells. *J Appl Toxicol*. 2015 Nov;35(11):1398-405.
29. Qin HS, Yu PP, Sun Y, Wang DF, Deng XF, Bao YL, Song J, Sun LG, Song ZB, Li YX. Paclitaxel inhibits selenoprotein S expression and attenuates endoplasmic reticulum stress. *Mol Med Rep*. 2016

- Jun;13(6):5118-24.
30. Mi XG, Song ZB, Sun LG, Bao YL, Yu CL, Wu Y, Li YX. Cardamonin inhibited cell viability and tumorigenesis partially through blockade of testes-specific protease 50-mediated nuclear factor-kappaB signaling pathway activation. *Int J Biochem Cell Biol.* 2016 Apr;73:63-71.
  31. Peng T, Pan Y, Gao X, Xi J, Zhang L, Ma K, Wu Y, Zhang J, Shang Q. Reduced abundance of the CYP6CY3-targeting let-7 and miR-100 miRNAs accounts for host adaptation of *Myzus persicae* nicotianae. *Insect Biochem Mol Biol.* 2016 Aug;75:89-97.
  32. Wei X, Zheng C, Peng T, Pan Y, Xi J, Chen X, Zhang J, Yang S, Gao X, Shang Q. miR-276 and miR-3016-modulated expression of acetyl-CoA carboxylase accounts for spirotetramatresistance in *Aphis gossypii* Glover. *Insect Biochem Mol Biol.* 2016 Oct 27. pii: S0965-1748(16)30158-8.
  33. Shi X, Yang J, Cui X, Huang J, Long Z, Zhou Y, Liu P, Tao L, Ruan Z, Xiao B, Zhang W, Li D, Dai K, Mao J, Xi X. Functional Effect of the Mutations Similar to the Cleavage during Platelet Activation at Integrin  $\beta$ 3 Cytoplasmic Tail when Expressed in Mouse Platelets. *PLoS One.* 2016 Nov 16;11(11):e0166136. 35.
  34. Zhang T, Li D, Wan L, Chen X, Wang X, Zhong B, Wu Z, Mao H, Hu C. Ctenopharyngodon idella PERK (EIF2AK3) decreases cell viability by phosphorylating eIF2 $\alpha$  under ER stress. *FISH SHELLFISH IMMUN.* 2017 Nov;70:568-574
  35. Ai HH, Zhou ZL, Sun LG, Yang MT, Li W, Yu CL, Song ZB, Huang YX, Wu Y, Liu L, Yang XG, Zhao YQ, Bao YL, Li YX. 20(S)-25-methoxydammarane-3 $\beta$ ,12 $\beta$ , 20-triol negatively regulates activation of STAT3 and ERK pathways and exhibits anti-cancer effects in HepG2 cells. *Apoptosis.* 2017 Nov;22(11):1404-1418
  36. Wang L, Wu Z, Huang Q, Huang K, Qi G, Wu C, Mao H, Xu X, Wang H, Hu C. Grass carp (*Ctenopharyngodon idella*) STAT3 regulates the eIF2 $\alpha$  phosphorylation through interaction with PKR. *Dev Comp Immunol.* 2018 Jan;78:26-34
  37. Zhang S, An S, Hoover K, Li Z, Li X, Liu X, Shen Z, Fang H, Ros VID, Zhang Q, Liu X. Host miRNAs are involved in hormonal regulation of HaSNPV-triggered climbing behavior in *Helicoverpa armigera*. *Mol Ecol.* 2018 Jan;27(2):459-475
  38. Wang L, Wu Z, Huang Q, Huang K, Qi G, Wu C, Mao H, Xu X, Wang H, Hu C. Grass carp (*Ctenopharyngodon idella*) STAT3 regulates the eIF2 $\alpha$  phosphorylation through interaction with PKR. *Dev Comp Immunol.* 2018 Jan;78:26-34
  39. Zhang J, Cao H, Xie J, Fan C, Xie Y, He X, Liao M, Zhang S, Wang H. The oncogene *Etv5* promotes MET in somatic reprogramming and orchestrates epiblast/primitive endoderm specification during mESCs differentiation. *Cell Death Dis.* 2018 Feb 14;9(2):224
  40. Yang M, Zhao H, Ai H, Zhu H, Wang S, Bao Y, Li Y. Alantolactone suppresses APOC3 expression and alters lipid homeostasis in L02 liver cells. *Eur J Pharmacol.* 2018 Jun 5;828:60-66
  41. Xu X, Shi X, Chen Y, Zhou T, Wang J, Xu X, Chen L, Hu L, Shen X. HS218 as an FXR antagonist suppresses gluconeogenesis by inhibiting FXR binding to PGC-1 $\alpha$  promoter. *Metabolism.* 2018 Aug;85:126-138
  42. Li G, Zhou R, Zhao X, Liu R, Ye C. Correlation between the expression of IL-18 and deep venous thrombosis. *Int J Mol Med.* 2018 Aug;42(2):2972
  43. Qin H, Li W, Sun Y, Bao Y, Sun L, Song Z, Zheng L, Zhao Y, Li Y. 20(S)-25-methoxydammarane-3 $\beta$ ,12 $\beta$ ,20-triol attenuates endoplasmic reticulum stress via ERK/MAPK signaling pathway. *Eur J Pharmacol.* 2018 Oct 5;836:75-82
  44. Song D, Yang Q, Lang Y, Wen Z, Xie Z, Zheng D, Yan T, Deng Y, Nakanishi H, Quan Z, Qing H. Manipulation of hippocampal CA3 firing via luminopsins modulates spatial and episodic short-term memory, especially working memory, but not long-term memory. *Neurobiol Learn Mem.* 2018 Nov;155:435-445
  45. Du T, Yang L, Xu X, Shi X, Xu X, Lu J, Lv J, Huang X, Chen J, Wang H, Ye JM, Hu L, Shen X. Vincamine as a GPR40 agonist improves glucose homeostasis in type 2 diabetic mice. *J Endocrinol.* 2018 Nov 1. pii: JOE-18-0432.R1
  46. Wu H, Liu HY, Liu WJ, Shi YL, Bao D. miR-377-5p inhibits lung cancer cell proliferation, invasion, and cell cycle progression by targeting AKT1 signaling. *J Cell Biochem.* 2018 Nov 28
  47. Ma K, Li F, Tang Q, Liang P, Liu Y, Zhang B, Gao X. CYP4CJ1-mediated gossypol and tannic acid tolerance in *Aphis gossypii* Glover. *Chemosphere.* 2019 Mar;219:961-970
  48. Chang YX, Zhao Y, Pan S, Qi ZP, Kong WJ, Pan YR, Li HR, Yang XY. Intramuscular Injection of Adenoassociated Virus Encoding Human Neurotrophic Factor 3 and Exercise Intervention Contribute to Reduce Spasms after Spinal Cord Injury. *Neural Plast.* 2019 Mar 11;2019:3017678
  49. Zhao W, Tan J, Zhu T, Ou J, Li Y, Shen L, Wu H, Han L, Liu Y, Jia X, Bai T, Li H, Ke X, Zhao J, Zou X, Hu Z, Guo H, Xia K. Rare inherited missense variants of POGZ associate with autism risk and disrupt neuronal development. *J Genet Genomics.* 2019 May 20;46(5):247-257
  50. Chen X, Han K, Lin G, Liu C, Wang S, Shi X, Hu Z, Wu C, Xu X, Hu C. Ctenopharyngodon Idella STAT3 alleviates autophagy by up-regulating BCL-2 expression. *FISH SHELLFISH IMMUN.* 2019 Aug;91:194-201
  51. Guo C, Wang X, Zhang H, Zhi L, Lv T, Li M, Lu C, Zhu W. Structure-based rational design of a novel chimeric PD1-NKG2D receptor for natural killer cells. *Mol Immunol.* 2019 Oct;114:108-113
  52. Xu K, Xie X, Qi G, Weng P, Hu Z, Han K, Yuan H, Li Y, Ran X, Lin G, Hu C. Grass carp STK38 regulates IFN I expression by decreasing the phosphorylation level of GSK3  $\beta$ . *Dev Comp Immunol.* 2019 Oct;99:103410
  53. Sun X, Hu F, Hou Z, Chen Q, Lan J, Luo X, Wang G, Hu J, Cao Z. SIX4 activates Akt and promotes tumor angiogenesis. *Exp Cell Res.* 2019 Oct 1;383(1):111495
  54. Xu W, Hua H, Chiu YH, Li G, Zhi H, Yu Z, Ren F, Luo Y, Cui W. CD146 Regulates Growth Factor-Induced mTORC2 Activity Independent of the PI3K and mTORC1 Pathways. *Cell Rep.* 2019 Oct 29;29(5):1311-1322.e5
  55. Yinjun Fan, Xiuxia Li, Abd Allah A H Mohammed, Ying Liu, Xiwu Gao. miR-147b-modulated expression of vestigial regulates wing development in the bird cherry-oat aphid *Rhopalosiphum padi* BMC Genomics. 2020 Jan 22;21(1):71.;doi: 10.1186/s12864-020-6466-7
  56. Cheng Y, Zhou M, Wang Y. Arctigenin antagonizes mineralocorticoid receptor to inhibit the transcription of Na/K-ATPase. *J RECEPT SIG TRANSD.* 2016;36(2):181-8.1.466.
  57. Li X, Ren X, Liu Y, Smaghe G, Liang P, Gao X. MiR-189942 regulates fufenozide susceptibility by modulating ecdysone receptor isoform B in *Plutella xylostella* (L.). *PESTIC BIOCHEM PHYS.* 2020 Feb;163:235-240
  58. Bin Zhu, Xi Sun, Ximan Nie, Pei Liang, Xiwu Gao. MicroRNA-998-3p contributes to Cry1Ac-resistance by targeting ABCC2 in lepidopteran insects INSECT BIOCHEM MOLEC. 2020 Feb;117:103283.;doi: 10.1016/j.ibmb.2019.103283
  59. Xin Chen, Kun Han, Tao Zhang, Guoqin Qi, Zeyin Jiang, Chengyu Hu. Grass carp (*Ctenopharyngodon idella*) NRF2 alleviates the oxidative stress and enhances cell viability through upregulating the expression of HO-1 *Fish Physiol Biochem.* 2020 Feb;46(1):417-428.;doi: 10.1007/s10695-019-00729-z.

60. Xiaomei Li, Yingshou Lei, Yang Yu, Yaqian Zhang, Wenfeng Zhang, Han Shen, Changli Tao, Fenglin Wu, Shulin Huang, Hongwei Shao. Discovery and characterization of a novel splice variant of the p53 tumor suppressor gene in a human T cell leukemia cell line INT J CLIN EXP PATHO. 2020 May 1;13(5):1121-1135
61. Xiaofen Xie, Kang Xu, Huiling Mao, Yangfeng Lv, Panwei Weng, Kaile Chang, Gang Lin, Chengyu Hu. Grass carp (*Ctenopharyngodon idella*) IRAK1 and STAT3 up-regulate synergistically the transcription of IL-10 FISH SHELLFISH IMMUN. 2020 Jul;102:28-35.;doi: 10.1016/j.fsi.2020.04.014
62. Zhong-Jian Shen, Yan-Jun Liu, Fang Zhu, Li-Mei Cai, Xiao-Ming Liu, Zhi-Qiang Tian, Jie Cheng, Zhen Li, Xiao-Xia Liu. MicroRNA-277 regulates dopa decarboxylase to control larval-pupal and pupal-adult metamorphosis of *Helicoverpa armigera* INSECT BIOCHEM MOLEC. 2020 Jul;122:103391.;doi: 10.1016/j.ibmb.2020.103391
63. Xinlei Yao, Kun Li, Chen Liang, Zilong Zhou, Jiao Wang, Shuyue Wang, Lei Liu, Chun-Lei Yu, Zhen-Bo Song, Yong-Li Bao, Li-Hua Zheng, Ying Sun, Guannan Wang, Yanxin Huang, Jingwen Yi, Luguo Sun, Yuxin Li. Tectorigenin enhances PDX1 expression and protects pancreatic  $\beta$ -cells by activating ERK and reducing ER stress J Biol Chem. 2020 Sep 11;295(37):12975-12992.;doi: 10.1074/jbc.RA120.012849
64. Qiong Mo, Zhao Xu, Fei Deng, Hualin Wang, Yun-Jia Ning. Host restriction of emerging high-pathogenic bunyaviruses via MOV10 by targeting viral nucleoprotein and blocking ribonucleoprotein assembly PLoS Pathog. 2020 Dec 7;16(12):e1009129.;doi: 10.1371/journal.ppat.1009129
65. Xin Xu, Yidi Chen, Danyang Zhu, Tong Zhao, Rui Xu, Jiaying Wang, Lihong Hu, Xu Shen. FX5 as a non-steroidal GR antagonist improved glucose homeostasis in type 2 diabetic mice via GR/HNF4 $\alpha$ /miR-122-5p pathway AGING-US. 2020 Dec 9;13(2):2436-2458.;doi: 10.18632/aging.202275
66. Yangfeng Lv, Hang Deng, Yapeng Liu, Kaile Chang, Hailing Du, Pengcheng Zhou, Huiling Mao, Chengyu Hu. The tyrosine kinase SRC of grass carp (*Ctenopharyngodon idellus*) up-regulates the expression of IFN I by activating TANK binding kinase 1 Dev Comp Immunol. 2021 Jan;114:103834.;doi: 10.1016/j.dci.2020.103834
67. Zhiyuan Niu, Guanxu Chen, Wei Chang, Pengyang Sun, Zhixia Luo, Huiyong Zhang, Lingtong Zhi, Changjiang Guo, Han Chen, Meichen Yin, Wuling Zhu. Chimeric antigen receptor-modified macrophages trigger systemic anti-tumour immunity J Pathol. 2021 Mar;253(3):247-257.;doi: 10.1002/path.5585
68. Hang Deng, Liugen Zeng, Kaile Chang, Yangfeng Lv, Hailing Du, Shina Lu, Yapeng Liu, Pengcheng Zhou, Huiling Mao, Chengyu Hu. Grass carp (*Ctenopharyngodon idellus*) Cdc25a down-regulates IFN I expression by reducing TBK1 phosphorylation Dev Comp Immunol. 2021 May;118:104014.;doi: 10.1016/j.dci.2021.104014
69. Ashfaque Ahmed, Meng Wang, Gaber Bergant, Reza Maroofian, Rongjuan Zhao, Majid Alfadhel, Marwan Nashabat, Muhammad Talal AlRifai, Wafaa Eyaid, Abdulrahman Alswaid, Christian Beetz, Yan Qin, Tengfei Zhu, Qi Tian, Lu Xia, Huidan Wu, Lu Shen, Shanshan Dong, Xinyi Yang, Cenyang Liu, Linya Ma, Qiumeng Zhang, Rizwan Khan, Abid Ali Shah, Jifeng Guo, Beisha Tang, Lea Leonardis, Karin Writzl, Borut Peterlin, Hui Guo, Sajid Malik, Kun Xia, Zhengmao Hu. Biallelic loss-of-function variants in NEMF cause central nervous system impairment and axonal polyneuropathy. Hum Genet. doi: 10.1007/s00439-020-02226-3.
70. Qiong-Ying Hu, Yun Yuan, Yu-Chen Li, Lu-Yao Yang, Xiang-Yu Zhou, Da-Qian Xiong, Zi-Yi Zhao. Programmed Cell Death Ligand 1-Transfected Mouse Bone Marrow Mesenchymal Stem Cells as Targeted Therapy for Rheumatoid Arthritis. Biomed Res Int. doi: 10.1155/2021/5574282.
71. Dan-Hua He, Yu-Fei Chen, Yi-Le Zhou, Shi-Bing Zhang, Ming Hong, Xianjun Yu, Su-Fen Wei, Xiang-Zhen Fan, Si-Yi Li, Qi Wang, Yongzhi Lu, Yong-Qiang Liu. Phytochemical library screening reveals betulinic acid as a novel Skp2-SCF E3 ligase inhibitor in non-small cell lung cancer. Cancer Sci. doi: 10.1111/cas.15005.
72. Bin Zhu, Linhong Li, Rui Wei, Pei Liang, Xiwu Gao. Regulation of GSTu1-mediated insecticide resistance in *Plutella xylostella* by miRNA and lncRNA. PLoS Genet. doi: 10.1371/journal.pgen.1009888.
73. Shina Lu, Xiaojue Peng, Gang Lin, Kang Xu, Shanghong Wang, Weihua Qiu, Hailing Du, Kaile Chang, Yangfeng Lv, Yapeng Liu, Hang Deng, Chengyu Hu, Xiaowen Xu. Grass carp (*Ctenopharyngodon idellus*) SHP2 suppresses IFN I expression via decreasing the phosphorylation of GSK3 $\beta$  in a non-contact manner. Fish Shellfish Immunol. doi: 10.1016/j.fsi.2021.07.005.
74. Xiaodong Li, Yichang Wang, Wei Wu, Jianyang Xiang, Lei Qi, Ning Wang, Maode Wang, Hai Yu. A Novel Risk Score Model Based on Eleven Extracellular Matrix-Related Genes for Predicting Overall Survival of Glioma Patients. J Oncol. doi: 10.1155/2022/4966820.
75. Zhiyuan Niu, Zhixia Luo, Pengyang Sun, Linwei Ning, Xinru Jin, Guanxu Chen, Changjiang Guo, Lingtong Zhi, Wei Chang, Wuling Zhu. In Vitro Nanobody Library Construction by Using Gene Designated-Region Pan-Editing Technology. Biodes Res. doi: 10.34133/2022/9823578.
76. Shangping Xing, Feifei Nong, Yaqin Wang, Da Huang, Jialiang Qin, Yu-Fei Chen, Dan-Hua He, Pei-En Wu, Huicai Huang, Ruoting Zhan, Hui Xu, Yong-Qiang Liu. Brusatol has therapeutic efficacy in non-small cell lung cancer by targeting Skp1 to inhibit cancer growth and metastasis. Pharmacol Res. doi: 10.1016/j.phrs.2022.106059.
77. Kaikai Mao, Ruoheng Jin, Zhijie Ren, Junjie Zhang, Zhao Li, Shun He, Kangsheng Ma, Hu Wan, Jianhong Li. miRNAs targeting CYP6ER1 and CarE1 are involved in nitenpyram resistance in *Nilaparvata lugens*. Insect Sci. doi: 10.1111/1744-7917.12910.
78. Meng-Yuan Zhang, Pei Zhang, Xu Su, Tian-Xin Guo, Jun-Lei Zhou, Bai-Zhong Zhang, Hong-Liang Wang. MicroRNA-190-5p confers chlorantraniliprole resistance by regulating CYP6K2 in *Spodoptera frugiperda* (Smith). Pestic Biochem Physiol. doi: 10.1016/j.pestbp.2022.105133.
79. Shuhua Shan, Jinping Niu, Ruopeng Yin, Jiangying Shi, Lizhen Zhang, Caihong Wu, Hanqing Li, Zhuoyu Li. Peroxidase from foxtail millet bran exerts anti-colorectal cancer activity via targeting cell-surface GRP78 to inactivate STAT3 pathway. Acta Pharm Sin B. doi: 10.1016/j.apsb.2021.10.004.
80. Yang Cheng, Tengfei Lu, Junliang Guo, Zhe Lin, Qiao Jin, Xiaoming Zhang, Zhen Zou. *Helicoverpa armigera* miR-2055 regulates lipid metabolism via fatty acid synthase expression. Open Biol. doi: 10.1098/rsob.210307.
81. Bai-Zhong Zhang, Meng-Yuan Zhang, Ya-She Li, Gui-Lei Hu, Xin-Zheng Fan, Tian-Xin Guo, Feng Zhou, Pei Zhang, Yan-Bing Wu, Yang-Fan Gao, Xi-Wu Gao. MicroRNA-263b confers imidacloprid resistance in *Sitobion miscanthi* (Takahashi) by regulating the expression of the nAChR  $\beta$  1 subunit. Pestic Biochem Physiol. doi: 10.1016/j.pestbp.2022.105218.
82. Gui-Lei Hu, Liu-Yang Lu, Ya-She Li, Xu Su, Wen-Yang Dong, Bai-Zhong Zhang, Run-Qiang Liu, Ming-Wang Shi, Hong-Liang Wang, Xi-Ling Chen. CYP4CJ6-mediated resistance to two neonicotinoid insecticides in *Sitobion miscanthi* (Takahashi). Bull Entomol Res. doi: 10.1017/S0007485322000037.
83. Haibo Fang, Xiu Wang, Xiaoxia Liu, J P Michaud, Yanan Wu, Huaijiang Zhang, Yisong Li, Zhen Li. Molecular characterization of insulin receptor (IR) in oriental fruit moth, *Grapholita molesta*

- (Lepidoptera: Tortricidae), and elucidation of its regulatory roles in glucolipid homeostasis and metamor. *Insect Mol Biol*. doi: 10.1111/imb.12794.
84. Dan-Yang Zhu, Jian Lu, Rui Xu, Juan-Zhen Yang, Xiang-Rui Meng, Xing-Nan Ou-Yang, Qiu-Ying Yan, Rui-Fang Nie, Tong Zhao, Yi-di Chen, Yin Lu, Yi-Nan Zhang, Wen-Jun Li, Xu Shen. FX5, a non-steroidal glucocorticoid receptor antagonist, ameliorates diabetic cognitive impairment in mice. *Acta Pharmacol Sin*. doi: 10.1038/s41401-022-00884-9.
85. Zhao Li, Kaikai Mao, Ruoheng Jin, Tingwei Cai, Yao Qin, Yunhua Zhang, Shun He, Kangsheng Ma, Hu Wan, Xuexiang Ren, Jianhong Li. miRNA novel\_268 targeting NLBCG3 is involved in nitenpyram and clothianidin resistance in *Nilaparvata lugens*. *Int J Biol Macromol*. doi: 10.1016/j.ijbiomac.2022.07.096.
86. Shaojin Li, Yaozhong Liang, Jianyu Zou, Zhenbin Cai, Hua Yang, Jie Yang, Yunlong Zhang, Hongsheng Lin, Guowei Zhang, Minghui Tan. SUMOylation of microtubule-cleaving enzyme KATNA1 promotes microtubule severing and neurite outgrowth. *J Biol Chem*. doi: 10.1016/j.jbc.2022.102292.
87. Qiu-Ying Yan, Jian-Lu Lv, Xing-Yi Shen, Xing-Nan Ou-Yang, Juan-Zhen Yang, Rui-Fang Nie, Jian Lu, Yu-Jie Huang, Jia-Ying Wang, Xu Shen. Patchouli alcohol as a selective estrogen receptor  $\beta$  agonist ameliorates AD-like pathology of APP/PS1 model mice. *Acta Pharmacol Sin*. doi: 10.1038/s41401-021-00857-4.

Version 2024.03.12