



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>

RIPA裂解液(中)

产品编号	产品名称	包装
P0013C	RIPA裂解液(中)	100ml

产品简介:

- 碧云天生产的RIPA裂解液(RIPA Lysis Buffer)是一种传统的细胞组织快速裂解液。RIPA裂解液裂解得到的蛋白样品可以用于常规的PAGE、Western、免疫沉淀(immunol precipitation, IP)、免疫共沉淀(co-IP)和ELISA等。
- 本产品可以用于动物、植物的细胞或组织样品,也可以用于真菌或细菌样品。
- RIPA的本意是Radio Immunoprecipitation Assay。RIPA裂解液的配方有很多种,根据其裂解液的强度大致可以分为强、中、弱三类。关于不同的RIPA裂解液以及碧云天生产的其它裂解液的主要特点和差异,以及如何选择裂解液可参考我们的相关网页:<http://www.beyotime.com/support/lysis-buffer.htm>。
- RIPA裂解液(中)的主要成分为50mM Tris (pH 7.4), 150mM NaCl, 1% NP-40, 0.5% sodium deoxycholate, 0.1% SDS, 以及sodium orthovanadate, sodium fluoride, EDTA, leupeptin等多种抑制剂。可以有效抑制蛋白降解。
- 用RIPA裂解液裂解得到的蛋白样品,可以用碧云天生产的BCA蛋白浓度测定试剂盒(P0009/P0010/P0010S/P0011/P0012/P0012S)测定蛋白浓度。由于含有较高浓度的去垢剂,不能用Bradford法测定由本裂解液裂解得到样品的蛋白浓度。

包装清单:

产品编号	产品名称	包装
P0013C	RIPA裂解液(中)	100ml
—	说明书	1份

保存条件:

-20°C保存,一年有效。

注意事项:

- 为取得最佳的使用效果,尽量避免过多的反复冻融。可以适当分装后使用。
- 需自备PMSF。PMSF(ST506)可以向碧云天订购。也可以选购总体效果更佳的碧云天生产的P1045/P1046 蛋白酶磷酸酶抑制剂混合物(通用型, 50X), 或者根据具体用途选择P1048/P1049 蛋白酶磷酸酶抑制剂混合物(通用型, 质谱兼容, 50X)、P1050/P1051蛋白酶磷酸酶抑制剂混合物(哺乳动物样品抽提用, 50X)、P1055/P1056 蛋白酶磷酸酶抑制剂混合物(植物样品抽提用, 50X)、P1060/P1061 蛋白酶磷酸酶抑制剂混合物(真菌或酵母抽提用, 50X)、P1065/P1066 蛋白酶磷酸酶抑制剂混合物(细菌抽提用, 50X)。如果无需检测磷酸化蛋白,也可以选不含磷酸酶抑制剂的蛋白酶抑制剂化合物。
- 裂解样品的所有步骤都需在冰上或4°C进行。
- 关于裂解液的选择,一方面可以参考碧云天的相关网页: <http://www.beyotime.com/support/lysis-buffer.htm>选择合适的裂解液;另一方面也需要通过一些预实验来摸索最佳的适合您实验条件的裂解液。
- 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. 对于培养细胞样品:

- 融解RIPA裂解液,混匀。取适当量的裂解液,在使用前数分钟内加入PMSF,使PMSF的最终浓度为1mM或者根据实验需要加入适当的上述蛋白酶磷酸酶抑制剂混合物。
- 对于贴壁细胞:去除培养液,用PBS、生理盐水或无血清培养液洗一遍(如果血清中的蛋白没有干扰,可以不洗)。按照6孔板每孔加入150-250微升裂解液的比例加入裂解液。用枪吹打数下,使裂解液和细胞充分接触。通常裂解液接触动物细胞1-2秒后,细胞就会被裂解。植物细胞宜在冰上裂解2-10min。
对于悬浮细胞:离心收集细胞,轻轻vortex或者弹击管底以把细胞尽量分散开。按照6孔板每孔细胞加入150-250微升裂解液的比例加入裂解液。轻弹管底以充分裂解细胞。充分裂解后应没有明显的细胞沉淀。如果细胞量较多,必需分装成50-100万细胞/管,然后再裂解。
对于细菌或酵母:对于1ml菌液或酵母液,离心去上清,如果有必要可以使用PBS洗涤一次,充分去除液体后,轻轻vortex或者弹击管底以把细菌或酵母尽量弹散。加入100-200微升裂解液,轻轻vortex或者弹击管底以混匀,冰上裂解2-10min。如果希望获得更好的裂解效果,细菌和酵母可以分别使用溶菌酶和破壁酶(Lyticase)消化,然后再使用本裂解液进行裂解。

裂解液用量说明：通常6孔板每孔细胞或者1ml的菌液或酵母液中的细菌和酵母量加入150微升裂解液已经足够，但如果细胞密度非常高可以适当加大裂解液的用量到200微升或250微升。每100万动物细胞用100微升本产品裂解后获得的上清，其蛋白浓度约为2-4mg/ml，不同细胞有所不同。

c. 充分裂解后，10000-14000g离心3-5分钟，取上清，即可进行后续的PAGE、Western和免疫沉淀等操作。

2. 对于组织样品：

a. 把组织剪切成细小的碎片。

b. 融解RIPA裂解液，混匀。取适当量的裂解液，在使用前数分钟内加入PMSF，使PMSF的最终浓度为1mM，或者根据实验需要加入适当的上述蛋白酶磷酸酶抑制剂混合物。

c. 按照每20毫克组织加入150-250微升裂解液的比例加入裂解液。(如果裂解不充分可以适当添加更多的裂解液，如果需要高浓度的蛋白样品，可以适当减少裂解液的用量。)

d. 用玻璃匀浆器匀浆，或使用碧云天生产的E6600 TissueMaster™手持式组织研磨仪研磨，直至充分裂解。也可以把组织样品冷冻后液氮研磨，研磨充分后加入裂解液进行裂解。

e. 充分裂解后，10000-14000g离心3-5分钟，取上清，即可进行后续的PAGE、Western和免疫沉淀等操作。每20mg冻存的小鼠肝脏组织用200微升本裂解液裂解后获得的上清，其蛋白浓度约为15-25mg/ml，不同状态的不同组织有所不同。

f. 如果组织样品本身非常细小，可以适当剪切后直接加入裂解液裂解，通过强烈vortex使样品裂解充分。然后同样离心取上清，用于后续实验。直接裂解的优点是比较方便，不必使用匀浆器或研磨设备，缺点是不如匀浆或研磨那样裂解得比较充分。

注：RIPA裂解液的裂解产物中经常会出现一小团透明胶状物，属正常现象。该透明胶状物为含有基因组DNA等的复合物。在不检测和基因组DNA结合特别紧密的蛋白的情况下，可以直接离心取上清用于后续实验；如果需要检测和基因组结合特别紧密的蛋白，则可以通过超声处理打碎打散该透明胶状物，随后离心取上清用于后续实验。如果检测一些常见的转录因子，例如NF-kappaB、p53等时，通常不必进行超声处理，就可以检测到这些转录因子。

附录：碧云天生产的各种裂解液主要特点、差异和选择

首先请参考下表，了解各种裂解液的主要特点和差异。

产品编号	P0013	P0013B	P0013C	P0013D	P0013F	P0013G	P0013J	P0013K
产品名称	Western及IP细胞裂解液	RIPA裂解液(强)	RIPA裂解液(中)	RIPA裂解液(弱)	NP-40裂解液	SDS裂解液	Western及IP细胞裂解液(无抑制剂)	RIPA裂解液(强, 无抑制剂)
有效裂解成分	1% Triton X-100	1% Triton X-100, 1% deoxycholate, 0.1% SDS	1% NP-40, 0.5% deoxycholate, 0.1% SDS	1% NP-40, 0.25% deoxycholate	1% NP-40	1% SDS	1% Triton X-100	1% Triton X-100, 1% deoxycholate, 0.1% SDS
裂解强度	温和	强	中	温和	温和	强	温和	强
对膜蛋白的提取	一般	很好	较好	一般	一般	很好	一般	很好
对胞浆蛋白的提取	很好	很好	很好	很好	很好	很好	很好	很好
对核蛋白的提取	较好	很好	较好	较好	较好	很好	较好	很好
胞浆磷酸化蛋白提取	很好	很好	很好	很好	很好	很好	很好	很好
细胞核转录因子提取	很好	很好	很好	很好	很好	很好	很好	很好
含蛋白酶抑制剂	是	是	是	是	是	是	否	否
含磷酸酯酶抑制剂	是	是	是	是	是	是	否	否
不同物种样品兼容性	高	高	高	高	高	高	高	高
主要用途	WB, IP, co-IP	WB, IP	WB, IP	WB, IP, co-IP	WB, IP, co-IP	WB, ChIP	WB, IP, co-IP	WB, IP

➤ 用于普通的Western、IP或co-IP，我们推荐使用Western及IP细胞裂解液(P0013)，该裂解液已被国内各大研究机构广泛使用，发表大量SCI论文，用户普遍反映很好。裂解细胞或组织后，没有非常粘滞的透明状DNA团块形成，不必采用超声处理等就可以非常理想地用于后续操作。另外该裂解液裂解的产物也适合用于磷酸化蛋白的Western检测。

➤ 对于某些特殊蛋白的IP，如果发现Western及IP细胞裂解液(P0013)效果不是非常理想，可以尝试用RIPA裂解液(强、中或弱)或NP-40裂解液。如果发现IP的时候背景很高，即非特异的蛋白也被IP下来，则需要选用裂解强度较高的裂解液，例如RIPA裂解液(强或中)。如果发现目的蛋白无法被IP下来，则说明裂解液的强度过强，可以使用较为温和的裂解液例如RIPA裂解液(弱)或NP-40裂解液。

➤ 对于某些难溶解蛋白的Western，如果发现Western及IP细胞裂解液(P0013)效果不是非常理想，可以尝试使用裂解强度更高的裂解液例如RIPA裂解液(强、中)或SDS裂解液。使用RIPA裂解液(强)的用户也非常多，发表了大量SCI论文。

➤ 用于特定用途需要自行添加特定抑制剂或不需要添加抑制剂时，可以考虑选购P0013J或P0013K。P0013J在很多时候可以兼容酶活性和生物小分子的检测，对于特定的酶或生物小分子的检测是否兼容需要自行测试，碧云天不提供具体的应用信息。P0013J的裂解能力比P0013K弱一些，但用于酶活性和生物小分子时，P0013J的兼容性通常会更好一些。

使用本产品的文献:

1. Zhang XT, Song TB, Du BL, Li DM, Li XM. Caspase-3 antisense oligodeoxynucleotides inhibit apoptosis in gamma-irradiated human leukemia HL-60 cells. *Apoptosis* 2007 Apr;12(4):743-51.
2. Deng XQ, Chen LL, Li NX. The expression of SIRT1 in nonalcoholic fatty liver disease induced by high-fat diet in rats. *Liver Int* 2007 Jun;27(5):708-15.
3. Shen Y, Yang X, Dong N, Xie X, Bai X, Shi Y. Generation and selection of immunized Fab phage display library against human B cell lymphoma. *Cell Res* 2007 Jul;17(7):650-60.
4. Wei Y, Weng D, Li F, Zou X, Young DO, Ji J, Shen P. Involvement of JNK regulation in oxidative stress-mediated murine liver injury by microcystin-LR. *Apoptosis* 2008 Aug;13(8):1031-42.
5. Qin ZX, Zhu HY, Hu YH. Effects of lysophosphatidylcholine on beta-amyloid-induced neuronal apoptosis. *Acta Pharmacol Sin* 2009 Apr;30(4):388-95.
6. Chen Y, Zhang H, Gou X, Horikawa Y, Xing J, Chen Z. Upregulation of HAb18G/CD147 in activated human umbilical vein endothelial cells enhances the angiogenesis. *Cancer Lett* 2009 Jun 8;278(1):113-21.
7. Zhang DL, Chen YQ, Jiang X, Ji TT, Mei B. Oxidative damage increased in presenilin1/presenilin2 conditional double knockout mice. *Neurosci Bull* 2009 Jun;25(3):131-7.
8. Liu RT, Zou LB, Lü QJ. Liquiritigenin inhibits Abeta(25-35)-induced neurotoxicity and secretion of Abeta(1-40) in rat hippocampal neurons. *Acta Pharmacol Sin* 2009 Jul;30(7):899-906.
9. Xiao X, Liu A, Wen H, Tian Y, Ni J, Liu G. Expression and localization of transcription factor Ets-1 in the rat ovary during the estrous cycle and pregnancy. *Fertil Steril* 2009;91(5 Suppl):1998-2005.
10. Chen W, Hou J, Yin Y, Jang J, Zheng Z, Fan H, Zou G. alpha-Bisabolol induces dose- and time-dependent apoptosis in HepG2 cells via a Fas- and mitochondrial-related pathway, involves p53 and NFkappaB. *Biochem Pharmacol* 2010;80(2):247-54.
11. Li XC, Tong GX, Zhang Y, Liu SX, Jin QH, Chen HH, Chen P. Neferine inhibits angiotensin II-stimulated proliferation in vascular smooth muscle cells through heme oxygenase-1. *Acta Pharmacol Sin* 2010;31(6):679-86.
12. Wu W, Yan C, Gan T, Chen Z, Lu X, Duerksen-Hughes PJ, Zhu X, Yang J. Nuclear proteome analysis of cisplatin-treated HeLa cells. *Mutat Res-Rev Mutat* 2010;691(1-2):1-8.
13. J. Dang, R.Jia, Y.Tu, S.Xiao, G.Ding. Erythropoietin prevents reactive oxygen species generation and renal tubular cell apoptosis at high glucose level. *Biomed Pharmacother* 2010 Dec;64(10):681-5.
14. Ma Y, Niu R, Sun Z, Wang J, Luo G, Zhang J, Wang J. Inflammatory responses induced by fluoride and arsenic at toxic concentration in rabbit aorta. *Arch Toxicol* 2012 Jun;86(6):849-56.
15. Liu K, Wang H, Long Y, Ye J, Yuan L. Coordinate lentiviral expression of Cre recombinase and RFP/EGFP mediated by FMDV 2A and analysis of Cre activity. *J Cell Biochem* 2012 Sep;113(9):2909-19.
16. Yu X, Tang J, Wang Q, Ye W, Tao K, Duan S, Lu C, Yang X, Dong S, Zheng X, Wang Y. The RxLR effector Avh241 from *Phytophthora sojae* requires plasma membrane localization to induce plant cell death. *New Phytol* 2012 Oct;196(1):247-60.
17. Wang Y, Liu Q, Liu Z, Li B, Sun Z, Zhou H, Zhang X, Gong Y, Shao C. Berberine, a genotoxic alkaloid, induces ATM-Chk1 mediated G2 arrest in prostate cancer cells. *Mutat Res-Rev Mutat* 2012 Jun 1;734(1-2):20-9.
18. Li R, Yu C, Gao R, Liu X, Lu J, Zhao L, Chen X, Ding Y, Wang Y, He J. Effects of DEHP on endometrial receptivity and embryo implantation in pregnant mice. *J Hazard Mater* 2012 Nov 30;241-242:231-40.
19. Yang M, Qin Z, Zhu Y, Li Y, Qin Y, Jing Y, Liu S. Vitamin D-binding protein in cerebrospinal fluid is associated with multiple sclerosis progression. *Mol Neurobiol* 2013 Jun;47(3):946-56.
20. Gao L, Song JR, Zhang JW, Zhao X, Zhao QD, Sun K, Deng WJ, Li R, Lv G, Cheng HY, Wei LX. Chloroquine promotes the anticancer effect of TACE in a rabbit VX2 liver tumor model. *Int J Biol Sci* 2013;9(4):322-30.
21. Pang X, Wei Y, Zhang Y, Zhang M, Lu Y, Shen P. Peroxisome proliferator-activated receptor- γ activation inhibits hepatocellular carcinoma cell invasion by upregulating plasminogen activator inhibitor-1. *Cancer Sci* 2013 Jun;104(6):672-80.
22. Xu P, Zhang XX, Miao C, Fu Z, Li Z, Zhang G, Zheng M, Liu Y, Yang L, Wang T. Promotion of melanoma cell invasion and tumor metastasis by microcystin-LR via phosphatidylinositol 3-kinase/AKT pathway. *Environ Sci Technol* 2013 Aug 6;47(15):8801-8.
23. Mo QQ, Chen PB, Jin X, Chen Q, Tang L, Wang BB, Li KZ, Wu P, Fang Y, Wang SX, Zhou JF, Ma D, Chen G. Inhibition of Hec1 expression enhances the sensitivity of human ovarian cancer cells to paclitaxel. *Acta Pharmacol Sin* 2013 Apr;34(4):541-8.
24. Sun LL, Zhang Y, Liu JF, Wang J, Zhu WL, Zhao LY, Xue YX, Lu L, Shi J. Role of melanin-concentrating hormone in the nucleus accumbens shell in rats behaviourally sensitized to methamphetamine. *Int J Neuropsychoph* 2013 Sep;16(8):1767-80.
25. Liu E, Kuang Y, He W, Xing X, Gu J. Casticin Induces Human Glioma Cell Death through Apoptosis and Mitotic Arrest. *CELL PHYSIOL BIOCHEM* 2013 Jun 3;31(6):805-814.
26. Ge D, Kong X, Liu W, Zhao J, Su L, Zhang S, Zhang Y, Zhao B, Miao J. Phosphorylation and nuclear translocation of integrin $\beta 4$ induced by a chemical small molecule contribute to apoptosis in vascular endothelial cells. *Apoptosis* 2013 Sep;18(9):1120-31.
27. Yang J, Huang H, Yang H, He X, Jiang X, Shi Y, Alatangale D, Shi L, Zhou N. Specific activation of the G protein-coupled receptor BNGR-A21 by the neuropeptide corazonin from the silkworm, *Bombyx mori*, dually couples to the G(q) and G(s) signaling cascades. *J Biol Chem* 2013 Apr 26;288(17):11662-75.
28. Xu WP, Yi M, Li QQ, Zhou WP, Cong WM, Yang Y, Ning BF, Yin C, Huang ZW, Wang J, Qian H, Jiang CF, Chen YX, Xia CY, Wang HY, Zhang X, Xie WF. Perturbation of miR-370-LIN28A-NF- κ B regulatory circuit contributes to the development of hepatocellular carcinoma. *Hepatology* 2013 Dec;58(6):1977-91.
29. Yin C, Wang PQ, Xu WP, Yang Y, Zhang Q, Ning BF, Zhang PP, Zhou WP, Xie WF, Chen WS, Zhang X. Hepatocyte nuclear factor-4a reverses malignancy of hepatocellular carcinoma through regulating miR-134 in the DLK1-DIO3 region. *Hepatology* 2013 Dec;58(6):1964-76.
30. Zhang X, Chen G, Lu Y, Liu J, Fang M, Luo J, Cao Q, Wang X. Association of Mitochondrial Letm1 with Epileptic Seizures. *Cereb Cortex* 2014 Oct;24(10):2533-40.
31. Sun H, Wu Y, Fu D, Liu Y, Huang C. SIRT6 regulates osteogenic differentiation of rat bone marrow mesenchymal stem cells partially via suppressing the nuclear factor- κ B signaling pathway. *Stem Cells* 2014 Jul;32(7):1943-55.
32. Cao M, Hou D, Liang H, Gong F, Wang Y, Yan X, Jiang X, Wang C, Zhang J, Zen K, Zhang CY, Chen X. miR-150 promotes the proliferation and migration of lung cancer cells by targeting SRC kinase signalling inhibitor 1. *Eur J Cancer* 2014 Mar;50(5):1013-24.
33. Jiang T, Yu JT, Zhu XC, Tan MS, Gu LZ, Zhang YD, Tan L. Triggering receptor expressed on myeloid cells 2 knockdown exacerbates aging-related neuroinflammation and cognitive deficiency in senescence-accelerated mouse prone 8 mice. *Neurobiol Aging* 2014 Jun;35(6):1243-51.
34. Wang G, Liu X, Meng L, Liu S, Wang L, Li J, Cui C, Meng J, Hu S, Wei Y. Up-regulated lipocalin-2 in pulmonary hypertension involving in pulmonary artery SMC resistance to apoptosis. *Int J Biol Sci* 2014 Jul 17;10(7):798-806.
35. Tang W, Yang J, Zhang F, Guo H, Peng F, Wang X. Activation of extracellular signal-regulated kinase 1/2 and Sp1 may contribute to the expression of tissue inhibitor of metalloproteinases-1 induced by transforming growth factor- β 1 in human pulmonary arterial smooth muscle cells. *Cytotherapy* 2014

- Feb;16(2):225-33.
36. Deng Z, Yan F, Jin Q, Li F, Wu J, Liu X, Zheng H. Reversal of multidrug resistance phenotype in human breast cancer cells using doxorubicin-liposome-microbubble complexes assisted by ultrasound. *J Control Release* 2014 Jan 28;174:109-16.
 37. Guo S, Xu X, Tang Y, Zhang C, Li J, Ouyang Y, Ju J, Bie P, Wang H. miR-15a inhibits cell proliferation and epithelial to mesenchymal transition in pancreatic ductal adenocarcinoma by down-regulating Bmi-1 expression. *Cancer Lett* 2014 Mar 1;344(1):40-6.
 38. Cong ZX, Wang HD, Zhou Y, Wang JW, Pan H, Zhang DD, Zhang L, Zhu L. Temozolomide and irradiation combined treatment-induced Nrf2 activation increases chemoradiation sensitivity in human glioblastoma cells. *Neuro-Oncology* 2014 Jan;116(1):41-8.
 39. Li S, Wang L, Zhao Q, Liu Y, He L, Xu Q, Sun X, Teng L, Cheng H, Ke Y. SHP2 Positively Regulates TGFβ1-induced Epithelial-mesenchymal Transition Modulated by Its Novel Interacting Protein Hook1. *J Biol Chem* 2014 Dec 5;289(49):34152-60.
 40. Chu H, Ding H, Tang Y, Dong Q. Erythropoietin protects against hemorrhagic blood-brain barrier disruption through the effects of aquaporin-4. *Lab Invest* 2014 Sep;94(9):1042-53.
 41. Wang S, Li Y, Fan J, Wang Z, Zeng X, Sun Y, Song P, Ju D. The role of autophagy in the neurotoxicity of cationic PAMAM dendrimers. *Biomaterials* 2014 Aug;35(26):7588-97.
 42. Zhu Y, Qin Z, Gao J, Yang M, Qin Y, Shen T, Liu S. Vitamin D Therapy in Experimental Allergic Encephalomyelitis Could be Limited by Opposing Effects of Sphingosine 1-Phosphate and Gelsolin Dysregulation. *Mol Neurobiol* 2014 Dec;50(3):733-43.
 43. Liu R, Li X, Luo L, Qiang X, Hylemon PB, Jiang Z, Zhang L, Zhou H. Taurocholate Induces Cyclooxygenase-2 Expression via the Sphingosine 1-phosphate Receptor 2 in a Human Cholangiocarcinoma Cell Line. *J Biol Chem* 2015 Dec 25;290(52):30988-1002.
 44. Zhu XC, Jiang T, Zhang QQ, Cao L, Tan MS, Wang HF, Ding ZZ, Tan L, Yu JT. Chronic Metformin Preconditioning Provides Neuroprotection via Suppression of NF-κB-Mediated Inflammatory Pathway in Rats with Permanent Cerebral Ischemia. *Mol Neurobiol* 2015 Aug;52(1):375-85.
 45. Guo F, Jiang T, Song W, Wei H, Wang F, Liu L, Ma L, Yin H, Wang Q, Xiong L. Electroacupuncture Attenuates Cerebral Ischemia-Reperfusion Injury in Diabetic Mice Through Adiponectin Receptor 1-Mediated Phosphorylation of GSK-3β. *Mol Neurobiol* 2015 Apr;51(2):685-95.
 46. Zhang Y, Lv X, Bai Y, Zhu X, Wu X, Chao J, Duan M, Buch S, Chen L, Yao H. Involvement of sigma-1 receptor in astrocyte activation induced by methamphetamine via up-regulation of its own expression. *J Neuroinflamm* 2015 Feb 17;12:29.
 47. Xie Q, Wang Z, Huang Y, Bi X, Zhou H, Lin M, Yu Z, Wang Y, Ni N, Sun J, Wu S, You Z, Guo C, Sun H, Wang Y, Gu P, Fan X. Characterization of human ethmoid sinus mucosa derived mesenchymal stem cells (hESMSCs) and the application of hESMSCs cell sheets in bone regeneration. *Biomaterials* 2015 Oct;66:67-82.
 48. Liu X, Dai F, Guo E, Li K, Ma L, Tian L, Cao Y, Zhang G, Palli SR, Li S. 20-Hydroxyecdysone (20E) Primary Response Gene E93 Modulates 20E Signaling to Promote Bombyx Larval-Pupal Metamorphosis. *J Biol Chem* 2015 Nov 6;290(45):27370-83.
 49. Li C, Lu Q, Huang P, Fu T, Li C, Guo L, Xu X. Activity-dependent downregulation of M-Type (Kv7) K⁺ channels surface expression requires the activation of iGluRs/Ca²⁺ /PKC signaling pathway in hippocampal neuron. *Neuropharmacology* 2015 Aug;95:154-67.
 50. Liu GY, , Jiang XX, Zhu X, He WY, Kuang YL, Ren K, Lin Y, Gou X. ROS activates JNK-mediated autophagy to counteract apoptosis in mouse mesenchymal stem cells in vitro. *Acta Pharmacol Sin* 2015 Dec;36(12):1473-9.
 51. Xie Q, Wang Z, Zhou H, Yu Z, Huang Y, Sun H, Bi X, Wang Y, Shi W, Gu P, Fan X. The role of miR-135-modified adipose-derived mesenchymal stem cells in bone regeneration. *Biomaterials* 2016 Jan;75:279-94.
 52. Wang Q, Zhang X, Shen E, Gao J, Cao F, Wang X, Li Y, Tian T, Wang J, Chen Z, Wang J, Shen L. The anti-HER3 antibody in combination with trastuzumab exerts synergistic antitumor activity in HER2-positive gastric cancer. *Cancer Lett* 2016 Sep 28;380(1):20-30.
 53. Cheng X, He S, Yuan J, Miao S, Gao H, Zhang J, Li Y, Peng W, Wu P. Lipoxin A4 attenuates LPS-induced mouse acute lung injury via Nrf2-mediated E-cadherin expression in airway epithelial cells. *Free Radical Bio Med* 2016 Apr;93:52-66.
 54. Wang WT, Ye H, Wei PP, Han BW, He B, Chen ZH, Chen YQ. LncRNAs H19 and HULC, activated by oxidative stress, promote cell migration and invasion in cholangiocarcinoma through a ceRNA manner. *J Hematol Oncol* 2016 Nov 3;9(1):117.
 55. Min J, Weitian Z, Peng C, Yan P, Bo Z, Yan W, Yun B, Xukai W. Correlation between insulin-induced estrogen receptor methylation and atherosclerosis. *Cardiovasc Diabetol* 2016 Nov 10;15(1):156.
 56. Shu Y, Xiao B, Wu Q, Liu T, Du Y, Tang H, Chen S, Feng L, Long L, Li Y, 5. The Ephrin-A5/EphA4 Interaction Modulates Neurogenesis and Angiogenesis by the p-Akt and p-ERK Pathways in a Mouse Model of TLE. *Mol Neurobiol* 2016 Jan;53(1):561-76.
 57. Qu Z, Wu J, Wu J, Luo D, Jiang C, Ding Y. Exosomes derived from HCC cells induce sorafenib resistance in hepatocellular carcinoma both in vivo and in vitro. *J EXP Clin Canc Res* 2016 Sep 30;35(1):159.
 58. Chen Y, Zhao R, Zhao Q, Shao Y, Zhang S. Knockdown of HPIP Inhibits the Proliferation and Invasion of Head-and-Neck Squamous Cell Carcinoma Cells by Regulating PI3K/Akt Signaling Pathway. *Oncol Res* 2016;24(3):153-60.
 59. Liu L, Li Y, Wang Y, Zhao P, Wei S, Li Z, Chang H, He H. Biochemical characterization and functional analysis of the POU transcription factor POU-M2 of Bombyx mori. *Int J Biol Macromol* 2016 May;86:701-8.
 60. Liu W, Zhang Y, Xia P, Li S, Feng X, Gao Y, Wang K, Song Y, Duan Z, Yang S, Shao Z, Yang C. MicroRNA-7 regulates IL-1β-induced extracellular matrix degeneration by targeting GDF5 in human nucleus pulposus cells. *Biomed Pharmacother* 2016 Oct;83:1414-1421.
 61. Lu Y, Xu S, Chen H, He M, Deng Y, Cao Z, Pi H, Chen C, Li M, Ma Q, Gao P, Ji Y, Zhang L, Yu Z, Zhou Z. CdSe/ZnS quantum dots induce hepatocyte pyroptosis and liver inflammation via NLRP3 inflammasome activation. *Biomaterials* 2016 Jun;90:27-39.
 62. Ma Y, Wei Z, Bast RC Jr, Wang Z, Li Y, Gao M, Liu Y, Wang X, Guo C, Zhang L, Wang X. Downregulation of TRIM27 expression inhibits the proliferation of ovarian cancer cells in vitro and in vivo. *Lab Invest* 2016 Jan;96(1):37-48.
 63. Fan TF, Wu TF, Bu LL, Ma SR, Li YC, Mao L, Sun ZJ, Zhang WF. Dihydropyridinyl promotes autophagy and apoptosis through ROS-STAT3 signaling in head and neck squamous cell carcinoma. *ONCOTARGET* 2016 Sep 13;7(37):59691-59703.
 64. Shen ZL, Wang B, Jiang KW, Ye CX, Cheng C, Yan YC, Zhang JZ, Yang Y, Gao ZD, Ye YJ, Wang S. Downregulation of miR-199b is associated with distant metastasis in colorectal cancer via activation of SIRT1 and inhibition of CREB/KISS1 signaling. *ONCOTARGET* 2016 Jun 7;7(23):35092-105.
 65. Wang Y, Leng H, Chen H, Wang L, Jiang N, Huo X, Yu B. Knockdown of UBE2T Inhibits Osteosarcoma Cell Proliferation, Migration, and Invasion by Suppressing the PI3K/Akt Signaling Pathway. *Oncol Res* 2016;24(5):361-369.
 66. Xie S, Jiang H, Zhai XW, Wei F, Wang SD, Ding J, Chen Y. Antitumor action of CDK inhibitor LS-007 as a single agent and in combination with ABT-199 against human acute leukemia cells. *Acta Pharmacol Sin* 2016 Nov;37(11):1481-1489.
 67. Zhao Z, Zhao J, Xue J, Zhao X, Liu P. Autophagy inhibition promotes epithelial-mesenchymal transition through ROS/HO-1 pathway in ovarian cancer cells. *Am J Cancer Res* 2016 Oct 1;6(10):2162-2177.
 68. Huang W, Li J, Guo X, Zhao Y, Yuan X. miR-663a inhibits hepatocellular carcinoma cell proliferation and invasion by targeting HMGA2. *Biomed Pharmacother* 2016 Jul;81:431-8.
 69. Li G, Li YY, Sun JE, Lin WH, Zhou RX. ILK-PI3K/AKT pathway participates in cutaneous wound contraction by regulating fibroblast migration

- and differentiation to myofibroblast. *Lab Invest* 2016 Jul;96(7):741-51.
70. Liu Y, Zheng Z, Shu B, Meng J, Zhang Y, Zheng C, Ke X, Gong P, Hu Q, Wang H. SUMO Modification Stabilizes Enterovirus 71 Polymerase 3D To Facilitate Viral Replication. *J Virol* 2016 Nov 14;90(23):10472-10485.
 71. Zhu Y, Wei W, Ye T, Liu Z, Liu L, Luo Y, Zhang L, Gao C, Wang N, Yu L. Small Molecule TH-39 Potentially Targets Hecl1/Nek2 Interaction and Exhibits Antitumor Efficacy in K562 Cells via G0/G1 Cell Cycle Arrest and Apoptosis Induction. *CELL PHYSIOL BIOCHEM* 2016;40(1-2):297-308.
 72. Zhao M, Su Z, Zhang S, Zhuang L, Xie Y, Li X. Suppressive Role of MicroRNA-148a in Cell Proliferation and Invasion in Ovarian Cancer Through Targeting Transforming Growth Factor- β -Induced 2. *Oncol Res* 2016;24(5):353-360.
 73. Gao Y, Ma L, Luo CL, Wang T, Zhang MY, Shen X, Meng HH, Ji MM, Wang ZF, Chen XP, Tao LY. IL-33 Exerts Neuroprotective Effect in Mice Intracerebral Hemorrhage Model Through Suppressing Inflammation/Apoptotic/Autophagic Pathway. *Mol Neurobiol* 2016 Jul 12. [Epub ahead of print]
 74. Zou L, Chai J, Gao Y, Guan J, Liu Q, Du JJ. Down-regulated PLAC8 promotes hepatocellular carcinoma cell proliferation by enhancing PI3K/Akt/GSK3 β /Wnt/ β -catenin signaling. *Biomed Pharmacother* 2016 Dec;84:139-146.
 75. Wang Y, Zhang B, Liu W, Dai Y, Shi Y, Zeng Q, Wang F. Noninvasive bioluminescence imaging of the dynamics of sanguinarine induced apoptosis via activation of reactive oxygen species. *ONCOTARGET* 2016 Apr 19;7(16):22355-67.
 76. Liang H, Liu S, Chen Y, Bai X, Liu L, Dong Y, Hu M, Su X, Chen Y, Huangfu L, Li X, Gu Y, Shan H. miR-26a suppresses EMT by disrupting the Lin28B/let-7d axis: potential cross-talks among miRNAs in IPF. *J Mol Med* 2016 Jun;94(6):655-65.
 77. Liu C, Qian P, Yang L, Zhang L, Chen C, He M, Lu Y, Feng W, Li M, Zhang Y, Zhong M, Yu Z, Zhou Z. Pubertal exposure to di-(2-ethylhexyl)-phthalate inhibits G9a-mediated histone methylation during spermatogenesis in mice. *Arch Toxicol* 2016 Apr;90(4):955-69.
 78. Zhang Z, Guo M, Zhang J, Du C, Xing Y. Leptin Regulates Tau Phosphorylation through Wnt Signaling Pathway in PC12 Cells. *NEURO SIGNALS* 2016 Oct 24;24(1):95-101.
 79. Guo W, Yu D, Wang X, Luo C, Chen Y, Lei W, Wang C, Ge Y, Xue W, Tian Q, Gao X, Yao W. Anti-inflammatory effects of interleukin-23 receptor cytokine-binding homology region rebalance T cell distribution in rodent collagen-induced arthritis. *ONCOTARGET* 2016 May 31;7(22):31800-13.
 80. Xiao J, Bei Y, Liu J, Dimitrova-Shumkovska J, Kuang D, Zhou Q, Li J, Yang Y, Xiang Y, Wang F, Yang C, Yang W. miR-212 downregulation contributes to the protective effect of exercise against non-alcoholic fatty liver via targeting FGF-21. *J Cell Mol Med* 2016 Feb;20(2):204-16.
 81. Yuan C, Zhu X, Han Y, Song C, Liu C, Lu S, Zhang M, Yu F, Peng Z, Zhou C. Elevated HOXA1 expression correlates with accelerated tumor cell proliferation and poor prognosis in gastric cancer partly via cyclin D1. *J EXP Clin Oncol* 2016 Jan 21;35:15.
 82. Yang R, Liu M, Liang H, Guo S, Guo X, Yuan M, Lian H, Yan X, Zhang S, Chen X, Fang F, Guo H, Zhang C. miR-138-5p contributes to cell proliferation and invasion by targeting Survivin in bladder cancer cells. *Mol Cancer* 2016 Dec 15;15(1):82.
 83. Ling X, Zhang G, Chen Q, Yang H, Sun L, Zhou N, Wang Z, Zou P, Wang X, Cui Z, Liu J, Ao L, Cao J. Shorter sperm telomere length in association with exposure to polycyclic aromatic hydrocarbons: Results from the MARHCS cohort study in Chongqing, China and in vivo animal experiments. *Environ Int* 2016 Oct;95:79-85.
 84. Ren M, Li K, Wang D, Guo J, Li J, Yang G, Long X, Shen W, Hu R, Wang X, Zeng K. Neurofibromin Regulates Seizure Attacks in the Rat Pilocarpine-Induced Model of Epilepsy. *Mol Neurobiol* 2016 Nov;53(9):6069-6077.
 85. Li L, Gu M, You B, Shi S, Shan Y, Bao L, You Y. Long non-coding RNA ROR promotes proliferation, migration and chemoresistance of nasopharyngeal carcinoma. *Cancer Sci* 2016 Sep;107(9):1215-22.
 86. Sun L, Wang D, Li X, Zhang L, Zhang H, Zhang Y5. Extracellular matrix protein ITGBL1 promotes ovarian cancer cell migration and adhesion through Wnt/PCP signaling and FAK/SRC pathway. *Biomed Pharmacother* 2016 Jul;81:145-51.
 87. Li ZW, Wu B, Ye P, Tan ZY, Ji YH. Brain natriuretic peptide suppresses pain induced by BmK I, a sodium channel-specific modulator, in rats. *J Headache Pain* 2016 Dec;17(1):90.
 88. Wang YJ, Liu JZ, Lv P, Dang Y, Gao JY, Wang Y. Long non-coding RNA CCAT2 promotes gastric cancer proliferation and invasion by regulating the E-cadherin and LATS2. *Am J Cancer Res* 2016 Nov 1;6(11):2651-2660.
 89. Lu Y, Zhu M, Li W, Lin B, Dong X, Chen Y, Xie X, Guo J, Li M. Alpha fetoprotein plays a critical role in promoting metastasis of hepatocellular carcinoma cells. *J Cell Mol Med* 2016 Mar;20(3):549-58.
 90. Huang Q, Elkhooly TA, Liu X, Zhang R, Yang X, Shen Z, Feng Q. Effects of hierarchical micro/nano-topographies on the morphology, proliferation and differentiation of osteoblast-like cells. *Colloid Surface B* 2016 Sep 1;145:37-45.
 91. Li H, Fan J, Sun L, Liu X, Cheng P, Fan H. Functional regeneration of ligament-bone interface using a triphasic silk-based graft. *Biomaterials* 2016 Nov;106:180-92.
 92. Zhang T, Wu Y, Fang Z, Yan Q, Zhang S, Sun R, Khaliq J, Li Y. Low expression of RBMS3 and SFRP1 are associated with poor prognosis in patients with gastric cancer. *Am J Cancer Res* 2016 Nov 1;6(11):2679-2689.
 93. Sun JY, Wang JD, Wang X, Liu HC, Zhang MM, Liu YC, Zhang CH, Su Y, Shen YY, Guo YW, Shen AJ, Geng MY. Marine-derived chromopeptide A, a novel class I HDAC inhibitor, suppresses human prostate cancer cell proliferation and migration. *Acta Pharmacol Sin* 2017 Jan 23.
 94. Zhou ZR, Yang ZZ, Wang SJ, Zhang L, Luo JR, Feng Y, Yu XL, Chen XX, Guo XM. The Chk1 inhibitor MK-8776 increases the radiosensitivity of human triple-negative breast cancer by inhibiting autophagy. *Acta Pharmacol Sin* 2017 Jan 2.
 95. Ji J, Zeng XN, Cao LL, Zhang L, Zhao Z, Yang DD, Sun XL. PPAR β / δ activation protects against corticosterone-induced ER stress in astrocytes by inhibiting the CpG hypermethylation of microRNA-181a. *Neuropharmacology* 2017 Feb;113(Pt A):396-406.
 96. Li Y, Wang LM, Xu JZ, Tian K, Gu CX, Li ZF. *Gastrodia elata* attenuates inflammatory response by inhibiting the NF- κ B pathway in rheumatoid arthritis fibroblast-like synoviocytes. *Biomed Pharmacother* 2017 Jan;85:177-181.
 97. Tang Z, Li J, Shen Q, Feng J, Liu H, Wang W, Xu L, Shi G, Ye X, Ge M, Zhou X, Ni S. Contribution of upregulated dipeptidyl peptidase 9 (DPP9) in promoting tumorigenicity, metastasis and the prediction of poor prognosis in non-small cell lung cancer (NSCLC). *Int J Cancer* 2017 Apr 1;140(7):1620-1632.
 98. Sun Z, Nie Q, Zhang L, Niu R, Wang J, Wang S. Fluoride reduced the immune privileged function of mouse Sertoli cells via the regulation of Fas/FasL system. *Chemosphere* 2017 Feb;168:318-325.
 99. Pan H, Xie Y, Zhang Z, Li K, Hu D, Zheng X, Fan Q, Tang T. YAP-mediated mechanotransduction regulates osteogenic and adipogenic differentiation of BMSCs on hierarchical structure. *Colloid Surface B* 2017 Jan 23;152:344-353.
 100. Zhou X, Sun F, Luo S, Zhao W, Yang T, Zhang G, Gao M, Lu R, Shu Y, Mu W, Zhuang Y, Ding F, Xu C, Lu Y. Let-7a Is an Antihypertrophic Regulator in the Heart via Targeting Calmodulin. *Int J Biol Sci* 2017 Jan 1;13(1):22-31.
 101. Bao X, Cai Y, Wang Y, Zhao J, He X, Yu D, Huang J, Jing S, Du Z, Yang T, Warner M, Gustafsson JA, Fan X. Liver X Receptor β Is Involved in Formalin-Induced Spontaneous Pain. *Mol Neurobiol* 2017 Mar;54(2):1467-1481.
 102. Liu H, Ai J, Shen A, Chen Y, Wang X, Peng X, Chen H, Shen Y, Huang M, Ding J, Geng M. c-Myc Alteration Determines the Therapeutic Response to FGFR Inhibitors. *Clin Cancer Res* 2017 Feb 15;23(4):974-984.
 103. Shi Y, Sun X, He X. Overexpression of Aristaless-Like Homeobox-4 Inhibits Proliferation, Invasion, and EMT in Hepatocellular Carcinoma Cells. *Oncol Res* 2017 Jan 2;25(1):11-18.
 104. Zhao P, Guan HT, Dai ZJ, Ma YG, Liu XX, Wang XJ. Knockdown of Tripartite Motif-Containing Protein 37 (TRIM37) Inhibits the Proliferation and Tumorigenesis in Colorectal Cancer Cells. *Oncol Res* 2017 Jan 2;25(1):115-122.
 105. Zhou H, Yang C, Chen H, Li X, Li Y, Fan X. A simple G-quadruplex molecular

- beacon-based biosensor for highly selective detection of microRNA. *Biosens Bioelectron* 2017 Jan 15;87:552-557.
106. Liu X, Quan B, Tian Z, Xi H, Jia G, Wang H, Zhang L, Liu R, Ma C, Han F, Li H, Yuan F. Elevated expression of KLK8 predicts poor prognosis in colorectal cancer. *Biomed Pharmacother* 2017 Jan 28;88:595-602.
 107. Wang X, Sha L, Sun N, Shen Y, Xu Q. Deletion of mTOR in Reactive Astrocytes Suppresses Chronic Seizures in a Mouse Model of Temporal Lobe Epilepsy. *Mol Neurobiol* 2017 Jan;54(1):175-187.
 108. Guo Y, Han B, Luo K, Ren Z, Cai L, Sun L. NOX2-ROS-HIF-1 α signaling is critical for the inhibitory effect of oleanolic acid on rectal cancer cell proliferation. *Biomed Pharmacother* 2017 Jan;85:733-739.
 109. Yang K, Wang Y, Ju Y, Li G, Liu C, Liu J, Liu Q, Wen X, Liu LC. p75 neurotrophin receptor regulates differential mineralization of rat ectomesenchymal stem cells. *Cell Proliferat* 2017 Feb;50(1).
 110. He ZJ, Zhu FY, Li SS, Zhong L, Tan HY, Wang K. Inhibiting ROS-NF- κ B-dependent autophagy enhanced brazilin-induced apoptosis in head and neck squamous cell carcinoma. *Food Chem Toxicol* 2017 Jan 4;101:55-66.
 111. Zheng N, Liu L, Liu WW, Li F, Hayashi T, Tashiro SI, Onodera S, Ikejima T. Crosstalk of ROS/RNS and autophagy in silibinin-induced apoptosis of MCF-7 human breast cancer cells *in vitro*. *Acta Pharmacol Sin* 2017 Feb;38(2):277-289.
 112. Liu J, Li Q, Li R, Ren P, Dong S. MicroRNA-363-3p inhibits papillary thyroid carcinoma progression by targeting PIK3CA. *Am J Cancer Res* 2017 Jan 1;7(1):148-158.
 113. Zhang B, Chang M, Wang J, Liu Y. Neuroglobin functions as a prognostic marker and promotes the tumor growth of glioma via upregulating apoptosis. *Biomed Pharmacother* 2017 Jan 16;88:173-180.
 114. Huang T, Liu R, Fu X, Yao D, Yang M, Liu Q, Lu WW, Wu C, Guan M. Aging Reduces an ERR α -Directed Mitochondrial Glutaminase Expression Suppressing Glutamine Anaplerosis and Osteogenic Differentiation of Mesenchymal Stem Cells. *Stem Cells* 2017 Feb;35(2):411-424.
 115. Mei L, Yuan L, Shi W, Fan S, Tang C, Fan X, Yang W, Qian Y, Hussain M, Wu X. SUMOylation of large tumor suppressor 1 at Lys751 attenuates its kinase activity and tumor-suppressor functions. *Cancer Lett* 2017 Feb 1;386:1-11.
 116. Luo C, Chen S, Xu N, Sai WB, Zhao W, Li YC, Hu XJ, Tian H, Gao XD, Yao WB. Establishment of a fluorescence-based method to evaluate endocytosis of desialylated glycoproteins *in vitro*. *Biomed Pharmacother* 2017 Jan 14;88:87-94.
 117. Lin S, Wang J, Wang L, Wen J, Guo Y, Qiao W, Zhou J, Xu G, Zhi F. Phosphodiesterase-5 inhibition suppresses colonic inflammation-induced tumorigenesis via blocking recruitment of MDSC. *Am J Cancer Res* 2017 Jan 1;7(1):41-52.
 118. Xie Y, Guo H, Wang L, Xu L, Zhang X, Yu L, Liu Q, Li Y, Zhao N, Zhao N, Ye R, Liu X. Human albumin attenuates excessive innate immunity via inhibition of microglial Mincle/Syk signaling in subarachnoid hemorrhage. *Brain Behav Immun* 2017 Feb;60:346-360.
 119. Huang N, Cheng S, Zhang X, Tian Q, Pi J, Tang J, Huang Q, Wang F, Chen J, Xie Z, Xu Z, Chen W, Zheng H, Cheng Y. Efficacy of NGR peptide-modified PEGylated quantum dots for crossing the blood-brain barrier and targeted fluorescence imaging of glioma and tumor vasculature. *Nanomedicine* 2017 Jan;13(1):83-93.
 120. Yin L, Mao Y, Song H, Wang Y, Zhou W, Zhang Z. Vincristine alleviates adriamycin-induced nephropathy through stabilizing actin cytoskeleton. *Cell Biosci* 2017 Jan 3;7:1.
 121. Chen T, Xu X, Zhao Z, Zhao F, Gao Y, Yan X, Wan Y. Hydrogen peroxide is a critical regulator of the hypoxia-induced alterations of store-operated Ca²⁺ entry into rat pulmonary arterial smooth muscle cells. *AM J Physiol-Lung C* 2017 Jan 27;ajplung.00138.2016.
 122. Tong J, Mo QG, Ma BX, Ge LL, Zhou G, Wang YW. The protective effects of Cichorium glandulosum seed and cynarin against cyclophosphamide and its metabolite acrolein-induced hepatotoxicity *in vivo* and *in vitro*. *Food Funct* 2017 Jan 25;8(1):209-219.
 123. Zuo D, Zhou Z, Wang H, Zhang T, Zang J, Yin F, Sun W, Chen J, Duan L, Xu J, Wang Z, Wang C, Lin B, Fu Z, Liao Y, Li S, Sun M, Hua Y, Zheng L, Cai Z. Alternol, a natural compound, exerts an anti-tumour effect on osteosarcoma by modulating of STAT3 and ROS/MAPK signalling pathways. *J Cell Mol Med* 2017 Feb;21(2):208-221.
 124. Wang J, Song W, Shen W, Yang X, Sun W, Qu S, Shang R, Ma B, Pu M, Tao K, Dou K, Li H. MicroRNA-200a Suppresses Cell Invasion and Migration by Directly Targeting GAB1 in Hepatocellular Carcinoma. *Oncol Res* 2017 Jan 2;25(1):1-10.
 125. Lan T, Ma W, Hong Z, Wu L, Chen X, Yuan Y. Long non-coding RNA small nucleolar RNA host gene 12 (SNHG12) promotes tumorigenesis and metastasis by targeting miR-199a/b-5p in hepatocellular carcinoma. *J EXP Clin Canc Res* 2017 Jan 10;36(1):11.
 126. Yang Y, Chen X, Min H, Song S, Zhang J, Fan S, Yi L, Wang H, Gu X, Ma Z, Gao Q. Persistent mitoKATP Activation Is Involved in the Isoflurane-induced Cytotoxicity. *Mol Neurobiol* 2017 Mar;54(2):1101-1110.
 127. Huang L, Zhou B, Wu H, Zheng L, Zhao J. Effect of apatite formation of biphasic calcium phosphate ceramic (BCP) on osteoblastogenesis using simulated body fluid (SBF) with or without bovine serum albumin (BSA). *Mat SCI ENG C-MATER* 2017 Jan 1;70(Pt 2):955-961.
 128. Guo J, Hao J, Jiang H, Jin J, Wu H, Jin Z, Li Z. Proteasome activator subunit 3 promotes pancreatic cancer growth via c-Myc-glycolysis signaling axis. *Cancer Lett* 2017 Feb 1;386:161-167.
 129. Luo Q, Guo H, Kuang P, Cui H, Deng H, Liu H, Lu Y, Wei Q, Chen L, Fang J, Zuo Z, Deng J, Li Y, Wang X, Zhao L. Sodium Fluoride Arrests Renal G2/M Phase Cell-Cycle Progression by Activating ATM-Chk2-P53/Cdc25C Signaling Pathway in Mice. *CELL PHYSIOL BIOCHEM* 2018;51(5):2421-2433.
 130. Zeng X, Liu G, Peng W, He J, Cai C, Xiong W, Chen S, Yang M, Dong Z. Combined deficiency of SLAMF8 and SLAMF9 prevents endotoxin-induced liver inflammation by downregulating TLR4 expression on macrophages. *Cell Mol Immunol* 2018 Dec 14.
 131. Ding X, Sun W, Chen J. IL-2 augments the sorafenib-induced apoptosis in liver cancer by promoting mitochondrial fission and activating the JNK/TAZ pathway. *Cancer Cell Int* 2018 Nov 9;18:176.
 132. Kang P, Zhang W, Chen X, Yi X, Song P, Chang Y, Zhang S, Gao T, Li C, Li S. TRPM2 mediates mitochondria-dependent apoptosis of melanocytes under oxidative stress. *Free Radical Bio Med* 2018 Oct;126:259-268.
 133. Huang WQ, Wen JL, Lin RQ, Wei P, Huang F. Effects of mTOR/NF- κ B signaling pathway and high thoracic epidural anesthesia on myocardial ischemia-reperfusion injury via autophagy in rats. *J Cell Physiol* 2018 Sep;233(9):6669-6678.
 134. Qu J, Zhang Z, Zhang P, Zheng C, Zhou W, Cui W, Xu L, Gao J. Downregulation of HMGB1 is required for the protective role of Nrf2 in EMT-mediated PF. *J Cell Physiol* 2019 Jun;234(6):8862-8872.
 135. Yu M, Liu Z, Liu Y, Zhou X, Sun F, Liu Y, Li L, Hua S, Zhao Y, Gao H, Zhu Z, Na M, Zhang Q, Yang R, Zhang J, Yao Y, Chen X. PTP1B markedly promotes breast cancer progression and is regulated by miR-193a-3p. *FEBS J* 2019 Mar;286(6):1136-1153.
 136. Chen X, Guo W, Chang Y, Chen J, Kang P, Yi X, Cui T, Guo S, Xiao Q, Jian Z, Li K, Gao T, Li S, Liu L, Li C. Oxidative stress-induced IL-15 trans-presentation in keratinocytes contributes to CD8⁺ T cells activation via JAK-STAT pathway *in vitro*. *FREE RADICAL BIO MED* 2019 Aug 1;139:80-91.
 137. Chen W, Zhou Y, Zhi X, Ma T, Liu H, Chen BW, Zheng X, Xie S, Zhao B, Feng X, Dang X, Liang T. Delivery of miR-212 by chimeric peptide-condensed supramolecular nanoparticles enhances the sensitivity of pancreatic ductal adenocarcinoma to doxorubicin. *Biomaterials* 2019 Feb 19;192:590-600.
 138. Li X, Wu M, An D, Yuan H, Li Z, Song Y, Liu Z. Suppression of Tafazzin promotes thyroid cancer apoptosis via activating the JNK signaling pathway and enhancing INF2-mediated mitochondrial fission. *J Cell Physiol* 2019 Feb 11.
 139. Yu C, Tian F, Liu J, Su M, Wu M, Zhu X, Qian W. Circular RNA cMras inhibits lung adenocarcinoma progression via modulating miR-567/PTPRG regulatory pathway. *CELL PROLIFERAT* 2019 May 52(3):e12610.

140. Xia W, Ci S, Li M, Wang M, Dianov GL, Ma Z, Li L, Hua K, Alagamuthu KK, Qing L, Luo L, Edick AM, Liu L, Hu Z, He L, Pan F, Guo Z Two-way crosstalk between BER and c-NHEJ repair pathway is mediated by Pol- β and Ku70. *FASEB J* 2019 Nov 33(11):11668-11681.
141. Gao Y, Wang Z, Zhu Y, Zhu Q, Yang Y, Jin Y, Zhang F, Jiang L, Ye Y, Li H, Zhang Y, Liang H, Xiang S, Miao H, Liu Y, Hao Y NOP2/Sun RNA methyltransferase 2 promotes tumor progression via its interacting partner RPL6 in gallbladder carcinoma. *Cancer Sci* 2019 Nov 110(11):3510-3519.
142. Lian G, Li X, Zhang L, Zhang Y, Sun L, Zhang X, Liu H, Pang Y, Kong W, Zhang T, Wang X, Jiang C Macrophage metabolic reprogramming aggravates aortic dissection through the HIF1 α -ADAM17 pathway \star . *EBioMedicine* 2019 Nov 49:291-304.
143. Meng G, Li B, Chen A, Zheng M, Xu T, Zhang H, Dong J, Wu J, Yu D, Wei J Targeting aerobic glycolysis by dichloroacetate improves Newcastle disease virus-mediated viro-immunotherapy in hepatocellular carcinoma. *BRIT J CANCER* 2020 Jan 122(1):111-120.
144. Xie Q, Wang Z, Zhou H, Yu Z, Huang Y, Sun H, Bi X, Wang Y, Shi W, Gu P, Fan X. The role of miR-135-modified adipose-derived mesenchymal stem cells in bone regeneration. *Biomaterials* 2016 Jan;75:279-94.
145. Jianping Jiang, Li Yan, Zheng Shi, Lixia Wang, Letian Shan, Thomas Efferth Hepatoprotective and Anti-Inflammatory Effects of Total Flavonoids of Qu Zhi Ke (Peel of Citrus Changshan-Huyou) on Non-Alcoholic Fatty Liver Disease in Rats via Modulation of NF- κ B and MAPKs *Phytomedicine* 2019 Nov;64:153082.
146. Yun Yu, Xiu-Yuan Lang, Xi-Xi Li, Run-Ze Gu, Qing-Shan Liu, Rongfeng Lan, Xiao-Yan Qin 2,3,5,4'-Tetrahydroxystilbene-2-O- β -d-glucoside Attenuates MPP+/MPTP-induced Neurotoxicity in Vitro and in Vivo by Restoring the BDNF-TrkB and FGF2-Akt Signaling Axis and Inhibition of Apoptosis *Food Funct* 2019 Sep 1;10(9):6009-6019.
147. Jinghang Zhang, Lihong Pei, Dan Zang, Yun Xue, Xiaohui Wang, Yiyang Chen, Jinsong Li, Jian Yu, Qingzu Gao, Wenyu Di, Chaochu Cui, Wei Su, Xianwei Wang Gender Differences of NLRP1 Inflammasome in Mouse Model of Alzheimer's Disease *Front Aging Neurosci* 2020 Nov 19;12:512097.
148. Fangcao Jin, Min Li, Xuyang Li, Yunpeng Zheng, Kun Zhang, Xiaojun Liu, Bingjie Cai, Guangwen Yin DNMT1-mediated methylation inhibits microRNA-214-3p and promotes hair follicle stem cell differentiate into adipogenic lineages *Stem Cell Res Ther* 2020 Oct 19;11(1):444.
149. Chaoshuai Zhao, Dongliang Wang, Xin Wang, Yaqi Mao, Ziqian Xu, Yue Sun, Xingyu Mei, Jun Song, Weimin Shi Down-regulation of exosomal miR-200c derived from keratinocytes in vitiligo lesions suppresses melanogenesis *J Cell Mol Med* 2020 Oct;24(20):12164-12175.
150. Hongzhi Sun, Hongmei Ma, Hao Zhang, Minjun Ji Up-regulation of MELK by E2F1 promotes the proliferation in cervical cancer cells *Int J Biol Sci* 2021 Sep 7;17(14):3875-3888.
151. Ling Meng, Cailing Lu, Bin Wu, Chunhua Lan, Laiming Mo, Chengying Chen, Xinhang Wang, Ning Zhang, Li Lan, Qihui Wang, Xia Zeng, Xiyi Li, Shen Tang Taurine Antagonizes Macrophages M1 Polarization by Mitophagy-Glycolysis Switch Blockage via Dragging SAM-PP2Ac Transmethylation *Front Immunol* 2021 Apr 12;12:648913.
152. Lin Yang, Hailong Si, Meng Ma, Yu Fang, Yina Jiang, Jintao Wang, Cheng Zhang, Haijuan Xiao LINC00221 silencing prevents the progression of hepatocellular carcinoma through let-7a-5p-targeted inhibition of MMP11 *Cancer Cell Int* 2021 Apr 9;21(1):202.
153. Chengpeng Zhao, Xiaoling Ling, Yunxia Xia, Bingxue Yan, Quanlin Guan The m6A methyltransferase METTL3 controls epithelial-mesenchymal transition, migration and invasion of breast cancer through the MALAT1/miR-26b/HMGA2 axis *Cancer Cell Int* 2021 Aug 21;21(1):441.
154. Jingjing Wan, Juan Zhou, Lu Fu, Yubin Li, Huawu Zeng, Xike Xu, Chao Lv, Huizi Jin Ascorbic Acid Inhibits Liver Cancer Growth and Metastasis in vitro and in vivo, Independent of Stemness Gene Regulation *Front Pharmacol* 2021 Aug 24;12:726015.
155. Kaiwen Liu, Jianlu Wei, Guohua Li, Ronghan Liu, Dawang Zhao, Yuanqiang Zhang, Jie Shi, Qing Xie, Lei Cheng Fexofenadine Protects Against Intervertebral Disc Degeneration Through TNF Signaling *Front Cell Dev Biol* 2021 Aug 24;9:687024.
156. Lijun Kong, Hwei Zhang, Chaosheng Lu, Keqing Shi, Hongjian Huang, Yushu Zheng, Yongqiang Wang, Dan Wang, Hongwei Wang, Wei Huang AICAR, an AMP-Activated Protein Kinase Activator, Ameliorates Acute Pancreatitis-Associated Liver Injury Partially Through Nrf2-Mediated Antioxidant Effects and Inhibition of NLRP3 Inflammasome *Activa Front Pharmacol* 2021 Aug 31;12:724514.
157. Pengran Du, Shaolong Zhang, Shuli Li, Yuqi Yang, Pan Kang, Jiayi Chen, Tianwen Gao, Chunying Li, Qian Zhang, Weigang Zhang Folic Acid Protects Melanocytes from Oxidative Stress via Activation of Nrf2 and Inhibition of HMGB1 *Oxid Med Cell Longev* 2021 Dec 7;2021:1608586.
158. Xiang Wang, Mengxue Li, Xueguang Zhang, Yaqian Li, Guolin He, Andras Dinnyés, Qun Sun, Wenming Xu CYP11A1 Upregulation Leads to Trophoblast Oxidative Stress and Fetal Neurodevelopmental Toxicity That can be Rescued by Vitamin D *Front Mol Biosci* 2021 Feb 15;7:608447.
159. Luping Yu, Huiru Zhang, Xuebing Guan, Dongdong Qin, Jian Zhou, Xin Wu Loss of ESRP1 blocks mouse oocyte development and leads to female infertility *Development* 2021 Jan 18;148(2):dev196931.
160. Zhaofu Liao, Yilin Chen, Chuncui Duan, Kuikui Zhu, Ruijin Huang, Hui Zhao, Maik Hintze, Qin Pu, Ziqiang Yuan, Luo Cheng Lv, Hongyi Chen, Binglin Lai, Shanshan Feng, Xufeng Qi, Dongqing Cai Cardiac telocytes inhibit cardiac microvascular endothelial cell apoptosis through exosomal miRNA-21-5p-targeted cdip1 silencing to improve angiogenesis following myocardial infarction *Theranostics* 2021 Jan 1;11(1):268-291.
161. Hongda Li, Yanfang Wang, Jiwen Liu, Xiaoli Chen, Yunhao Duan, Xiaoyu Wang, Yajing Shen, Yashu Kuang, Tao Zhuang, Brain Tomlinson, Paul Chan, Zuoren Yu, Yu Cheng, Lin Zhang, Zhongmin Liu, Yuzhen Zhang, Zhenlin Zhao, Qi Zhang, Jie Liu Endothelial Klf2-Foxp1-TGF β signal mediates the inhibitory effects of simvastatin on maladaptive cardiac remodeling *Theranostics* 2021 Jan 1;11(4):1609-1625.
162. Chunqi Liu, Liang Wang, Xiaocong Liu, Yuping Tan, Lei Tao, Yuzhou Xiao, Pengchi Deng, Huijuan Wang, Qianyi Deng, Yiyun Lin, Hui Jie, Huaqin Zhang, Jing Zhang, Yong Peng, Hu Zhang, Zongguang Zhou, Qingxiang Sun, Xiaobo Cen, Yinglan Zhao Cytoplasmic SHMT2 drives the progression and metastasis of colorectal cancer by inhibiting β -catenin degradation *Theranostics* 2021 Jan 1;11(6):2966-2986.
163. Junmin Li, Rongmei Fan, Hui Xiao Circ_ZFR contributes to the paclitaxel resistance and progression of non-small cell lung cancer by upregulating KPNA4 through sponging miR-195-5p *Cancer Cell Int* 2021 Jan 6;21(1):15.
164. Feng Long, Hongbiao Shi, Pengyu Li, Shaoqiang Guo, Yuer Ma, Shijun Wei, Yan Li, Fei Gao, Shang Gao, Meitian Wang, Ruonan Duan, Xiaojing Wang, Kun Yang, Wenjie Sun, Xi Li, Jiangxia Li, Qiji Liu A SMOC2 variant inhibits BMP signaling by competitively binding to BMPRI1B and causes growth plate defects *Bone* 2021 Jan;142:115686.
165. Yabing Chen, Chun Pan, Xiaotong Wang, Dihui Xu, Yuhan Ma, Jianhang Hu, Peilin Chen, Zou Xiang, Qiu Rao, Xiaodong Han Silencing of METTL3 effectively hinders invasion and metastasis of prostate cancer cells *Theranostics* 2021 Jun 11;11(16):7640-7657.
166. Yaping Jiang, Xin Zhang, Xiaoyan Zhang, Kun Zhao, Jing Zhang, Chuanxi Yang, Yihui Chen Comprehensive Analysis of the Transcriptome-Wide m6A Methylome in Pterygium by MeRIP Sequencing *Front Cell Dev Biol* 2021 Jun 25;9:670528.
167. Zeyan Zhang, Qianfu Gao, Shanchao Wang Kinase GSK3 β functions as a suppressor in colorectal carcinoma through the FTO-mediated MZF1/c-Myc axis *J Cell Mol Med* 2021 Mar;25(5):2655-2665.
168. Jiaping Zheng, Yunzhen Xie, Lingjia Ren, Liqin Qi, Li Wu, Xiaodong Pan, Jianxing Zhou, Zhou Chen, Libin Liu GLP-1 improves the supportive ability of astrocytes to neurons by promoting aerobic glycolysis in Alzheimer's disease *Mol Metab* 2021

- May;47:101180.
169. Yifei Zhu, Lei Wen, Sheng Wang, Ka Zhang, Yue Cui, Chi Zhang, Lei Feng, Fan Yu, Yongquan Chen, Ruxing Wang, Xin Ma Omega-3 fatty acids improve flow-induced vasodilation by enhancing TRPV4 in arteries from diet-induced obese mice *Cardiovasc Res* 2021 Nov 1;117(12):2450-2458.
170. Jing Zhang, Yaozhen Chen, Dandan Yin, Fan Feng, Qunxing An, Zhixin Liu, Ning An, Jinmei Xu, Jing Yi, Shunli Gu, Wen Yin, Yazhou Wang, Xingbin Hu Caspase-3/NLRP3 signaling in the mesenchymal stromal niche regulates myeloid-biased hematopoiesis *Stem Cell Res Ther* 2021 Nov 20;12(1):579.
171. Xuan Gu, Yong-Yue Han, Chong-Yang Yang, Hui-Min Ji, Yue-Jiao Lan, Yu-Qian Bi, Cheng Zheng, Jiao Qu, Ming-Han Cheng, Jian Gao Activated AMPK by metformin protects against fibroblast proliferation during pulmonary fibrosis by suppressing FOXM1 *Pharmacol Res* 2021 Nov;173:105844.
172. Qi Jia, Lin Han, Xiaoyu Zhang, Wenning Yang, Yushan Gao, Yifan Shen, Bing Li, Shuyan Wang, Mingzhen Qin, Scott Lowe, Jianguo Qin, Gaimei Hao Tongluo Yishen Decoction Ameliorates Renal Fibrosis via Regulating Mitochondrial Dysfunction Induced by Oxidative Stress in Unilateral Ureteral Obstruction Rats *Front Pharmacol* 2021 Oct 12;12:762756.
173. Jintao Zhang, Xiaojin He, Huan Wu, Xin Zhang, Shenmin Yang, Chunyu Liu, Siyu Liu, Rong Hua, Shushu Zhou, Shuqin Zhao, Fan Hu, Junqiang Zhang, Wangjie Liu, Huiru Cheng, Yang Gao, Feng Zhang, Yunxia Cao, Mingxi Liu Loss of DRC1 function leads to multiple morphological abnormalities of the sperm flagella and male infertility in human and mouse *Hum Mol Genet* 2021 Oct 13;30(21):1996-2011.
174. Lu Yi, Haohui Wang, Wei Li, Kun Ye, Wei Xiong, Haixin Yu, Xin Jin The FOXM1/RNF26/p57 axis regulates the cell cycle to promote the aggressiveness of bladder cancer *Cell Death Dis* 2021 Oct 14;12(10):944.
175. Liyuan Qian, Yunzheng Li, Yajuan Cao, Gang Meng, Jin Peng, Huan Li, Ye Wang, Tiancheng Xu, Laizhu Zhang, Beicheng Sun, Binghua Li, Decai Yu Pan-Cancer Analysis of Glycolytic and Ketone Bodies Metabolic Genes: Implications for Response to Ketogenic Dietary Therapy *Front Oncol* 2021 Oct 7;11:689068.
176. Jie Zheng, Lu Yao, Yijing Zhou, Xiaoqun Gu, Can Wang, Kaifan Bao, Yang Sun, Min Hong A novel function of NLRP3 independent of inflammasome as a key transcription factor of IL-33 in epithelial cells of atopic dermatitis *Cell Death Dis* 2021 Sep 24;12(10):871.
177. Lu Yang, Bo Wang, Xinyan Jiao, Can Zhou, Su Chen, Xiaoqian Gao, Wei Sun, Shaoran Song, Juan Li, Jie Liu, Yaochun Wang, Peijun Liu TAZ maintains telomere length in TNBC cells by mediating Rad51C expression *Breast Cancer Res* 2021 Sep 6;23(1):89.
178. Gui-Lin Jin, Li-Mian Hong, Hai-Ping Liu, Rong-Cai Yue, Zu-Cheng Shen, Jian Yang, Ying Xu, Hui-Hui Huang, Yi Li, Bo-Jun Xiong, Yan-Ping Su, Chang-Xi Yu Koumine modulates spinal microglial M1 polarization and the inflammatory response through the Notch-RBP-J κ signaling pathway, ameliorating diabetic neuropathic pain in rats *Phytomedicine* 2021 Sep;90:153640.
179. Jianpeng Sheng, Junlei Zhang, Lin Wang, Vincent Tano, Jianghui Tang, Xun Wang, Jiangchao Wu, Jinyuan Song, Yaxing Zhao, Jingxia Rong, Fei Cheng, Jianfeng Wang, Yinan Shen, Liang Wen, Junjun He, Hui Zhang, Taohong Li, Qi Zhang, Xueli Bai, Zhimin Lu, Tingbo Liang Topological analysis of hepatocellular carcinoma tumour microenvironment based on imaging mass cytometry reveals cellular neighbourhood regulated reversely by macrophages with different ontogeny *Gut* 2022 Jun;71(6):1176-1191.
180. Shicheng Sun, Changfa Guo, Taihong Gao, Dengzhen Ma, Xiangsheng Su, Qi Pang, Rui Zhang Hypoxia Enhances Glioma Resistance to Sulfasalazine-Induced Ferroptosis by Upregulating SLC7A11 via PI3K/AKT/HIF-1 α Axis *Oxid Med Cell Longev* 2022 Nov 18;2022:7862430.

注：更多使用本产品的文献请参考产品网页。

Version 2024.03.12