



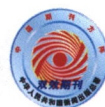
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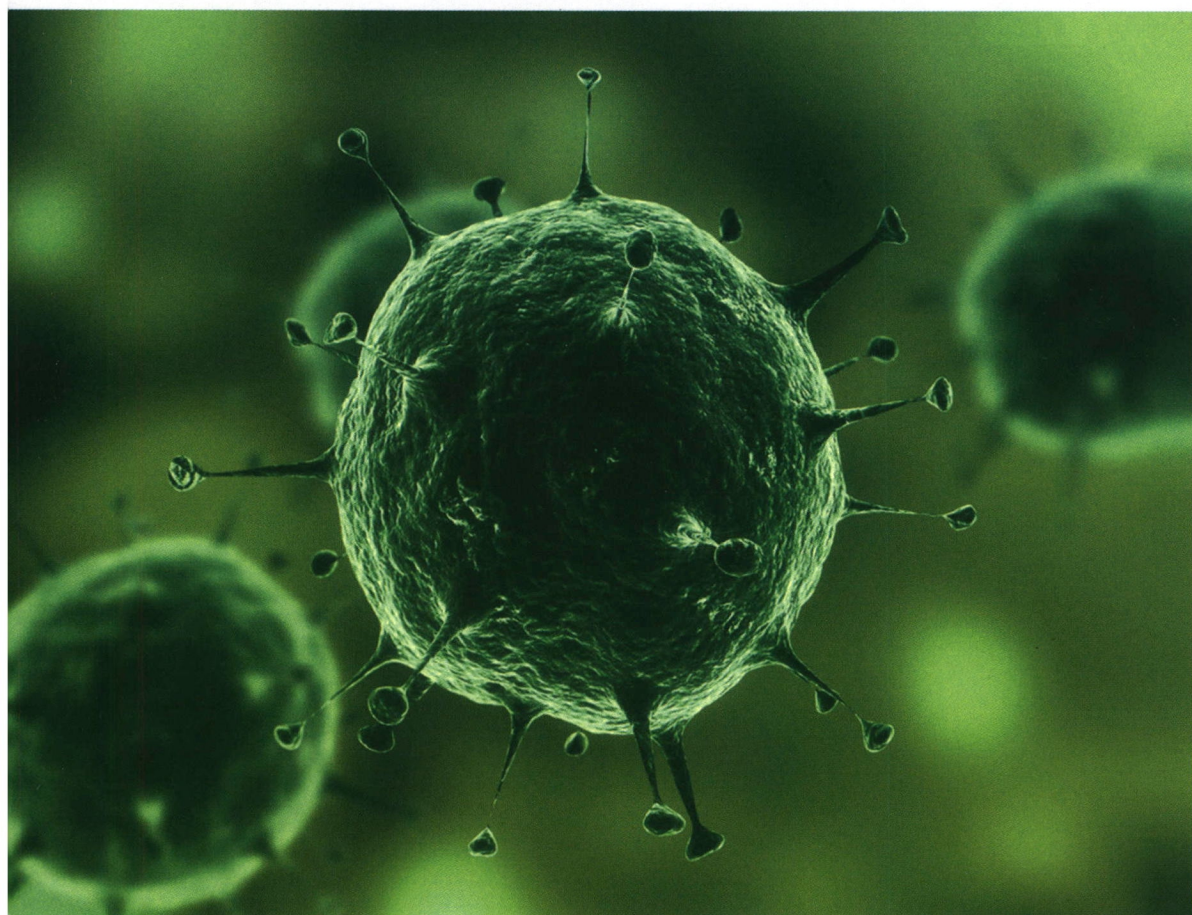
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- [1] HAQ S, GRONDIN J, BANSKOTA S, *et al.* Autophagy: Roles in intestinal mucosal homeostasis and inflammation[J]. *J Biomed Sci*, 2019, 26(1): 19. DOI:10.1186/s12929-019-0512-2.
- [2] KIM I, XU W, REED J C. Cell death and endoplasmic reticulum stress: Disease relevance and therapeutic opportunities[J]. *Nat Rev Drug Discov*, 2008, 7(12): 1013-1030. DOI: 10.1038/nrd2755.
- [3] MINAMINO T, KITAKAZE M, KOMURO I. Endoplasmic reticulum stress as a therapeutic target in cardiovascular disease[J]. *Circ Res*, 2010, 107(9): 1071-1082. DOI: 10.1161/circresaha.110.227819.
- [4] RON D, WALTER P. Signal integration in the endoplasmic reticulum unfolded protein response[J]. *Nat Rev Mol Cell Biol*, 2007, 8(7): 519-529. DOI:10.1038/nrm2199.
- [5] 朱然. 应用微透析检测创伤/失血性休克肠道代谢及其参与肠屏障损伤机制的研究[D]. 沈阳: 中国医科大学, 2018.
- [6] ZENG Z, CHEN Z, XU S, *et al.* Polydatin alleviates small intestine injury during hemorrhagic shock as a SIRT1 activator[J]. *Oxid Med Cell Longev*, 2015. DOI:10.1155/2015/965961.
- [7] JIAN B, HSIEH C H, CHEN J, *et al.* Activation of endoplasmic reticulum stress response following trauma-hemorrhage[J]. *Biochim Biophys Acta*, 2008, 1782(11): 621-626. DOI: 10.1016/j.bbadis.2008.08.007.
- [8] SODHI C P, JIA H, YAMAGUCHI Y, *et al.* Intestinal epithelial TLR-4 activation is required for the development of acute lung injury after trauma/hemorrhagic shock via the release of HMGB1 from the gut[J]. *J Immunol*, 2015, 194(10): 4931-4939. DOI: 10.4049/jimmunol.1402490.
- [9] RAO G, YADAV V R, AWASTHI S, *et al.* Effect of liposome-encapsulated hemoglobin resuscitation on proteostasis in small intestinal epithelium after hemorrhagic shock[J]. *Am J Physiol Gastrointest Liver Physiol*, 2016, 311(1): G180-G191. DOI: 10.1152/ajpgi.00157.2016.
- [10] KALLINEN O, MAISNIEMI K, BOHLING T, *et al.* Multiple organ failure as a cause of death in patients with severe burns[J]. *J Burn Care Res*, 2012, 33(2): 206-211. DOI:10.1097/BCR.0b013e3182331e73.
- [11] NAKAO A, TOYOKAWA H, TSUNG A, *et al.* Ex vivo application of carbon monoxide in University of Wisconsin solution to prevent intestinal cold ischemia/reperfusion injury[J]. *Am J Transplant*, 2006, 6(10): 2243-2255. DOI:10.1111/j.1600-6143.2006.01465.x.
- [12] WANG Z E, WU D, ZHENG L W, *et al.* Effects of glutamine on intestinal mucus barrier after burn injury[J]. *Am J Transl Res*, 2018, 10(11): 3833-3846.
- [13] ZHOU C, BAI W, CHEN Q, *et al.* Protective effect of crocetin against burn-induced intestinal injury[J]. *J Surg Res*, 2015, 198(1): 99-107. DOI:10.1016/j.jss.2015.05.052.
- [14] HUANG Y, FENG Y, WANG Y, *et al.* Severe burn-induced intestinal epithelial barrier dysfunction is associated with endoplasmic reticulum stress and autophagy in mice[J]. *Front Physiol*, 2018, 9: 441. DOI:10.3389/fphys.2018.00441.
- [15] DEITCH E A. Intestinal permeability is increased in burn patients shortly after injury[J]. *Surgery*, 1990, 107(4): 411-416. DOI:10.1002/bjs.1800770541.
- [16] EPSTEIN M D, TCHERVENKOV J I, ALEXANDER J W, *et al.* Increased gut permeability following burn trauma[J]. *Arch Surg*, 1991, 126(2): 198-200. DOI:10.1001/archsurg.1991.01410260086012.
- [17] SAMBOL J, DEITCH E A, TAKIMOTO K, *et al.* Cellular basis of burn-induced cardiac dysfunction and prevention by mesenteric lymph duct ligation[J]. *J Surg Res*, 2013, 183(2): 678-685. DOI:10.1016/j.jss.2013.01.065.
- [18] ZAETS S B, XU D Z, LU Q, *et al.* Does recombinant factor XIII eliminate early manifestations of multiple-organ injury after experimental burn similarly to gut ischemia-reperfusion injury or trauma-hemorrhagic shock? [J]. *J Burn Care Res*, 2014, 35(4): 328-336. DOI:10.1097/BCR.0b013e3182a228ee.
- [19] 胡建红. 肠三叶因子减轻烧伤内质网应激促进肠上皮细胞谷氨酰胺转运的机制[D]. 重庆: 第三军医大学, 2016.
- [20] ROBERTS S E, AKBARI A, THORNE K, *et al.* The incidence of acute pancreatitis: Impact of social deprivation, alcohol consumption, seasonal and demographic factors[J]. *Aliment Pharmacol Ther*, 2013, 38(5): 539-548. DOI: 10.1111/apt.12408.
- [21] ZHOU M T. Acute lung injury and ARDS in acute pancreatitis: Mechanisms and potential intervention[J]. *World J Gastroenterol*, 2010, 16(17): 2094. DOI:10.3748/wjg.v16.i17.2094.
- [22] YOU Y D, DENG W H, GUO W Y, *et al.* 4-Phenylbutyric acid attenuates endoplasmic reticulum stress-mediated intestinal epithelial cell apoptosis in rats with severe acute pancreatitis[J]. *Dig Dis Sci*, 2019. DOI:10.1007/s10620-018-5437-1.
- [23] OUYANG J, ZHANG Z H, ZHOU Y X, *et al.* Up-regulation of tight-junction proteins by p38 mitogen-activated protein kinase/p53 inhibition leads to a reduction of injury to the intestinal mucosal barrier in severe acute pancreatitis[J]. *Pancreas*, 2016, 45(8): 1136-1144. DOI:10.1097/MPA.0000000000000656.
- [24] OTANI S, COOPERSMITH C M. Gut integrity in critical illness[J]. *J Intensive Care*, 2019, 7: 17. DOI: 10.1186/s40560-019-0372-6.
- [25] FU J, LI G, WU X, *et al.* Sodium butyrate ameliorates intestinal injury and improves survival in a rat model of cecal ligation and puncture-induced sepsis[J]. *Inflammation*, 2019. DOI: 10.1007/s10753-019-00987-2.
- [26] SAIA R S, RIBEIRO A B, GIUSTI H. Cholecystokinin modulates the mucosal inflammatory response and prevents the lipopolysaccharide-induced intestinal epithelial barrier dysfunction[J]. *Shock*, 2019. DOI:10.1097/SHK.0000000000001355.
- [27] LIU L, WU H, ZANG J, *et al.* 4-Phenylbutyric acid reveals good beneficial effects on vital organ function via anti-endoplasmic reticulum stress in septic rats[J]. *Crit Care Med*, 2016, 44(8): e689-e701. DOI:10.1097/CCM.0000000000001662.
- [28] FERLITO M, WANG Q, FULTON W B, *et al.* Hydrogen sulfide [corrected] increases survival during sepsis: Protective effect of CHOP inhibition[J]. *J Immunol*, 2014, 192(4): 1806-1814. DOI:10.4049/jimmunol.1300835.
- [29] VANDENBROUCKE R E, DEJONCKHEERE E, HAUWERMEIREN F, *et al.* Matrix metalloproteinase 13 modulates intestinal epithelial barrier integrity in inflammatory diseases by activating TNF[J]. *EMBO Mol Med*, 2013, 5(7): 1000-1016. DOI:10.1002/emmm.201202100.
- [30] HU H, TIAN M, DING C, *et al.* The C/EBP homologous protein (CHOP) transcription factor functions in endoplasmic reticulum stress-induced apoptosis and microbial infection[J]. *Front Immunol*, 2018, 9: 3083. DOI:10.3389/fimmu.2018.03083.

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