

全国中文核心期刊
中国科技核心期刊
中国农业核心期刊
RCCSE中国核心学术期刊
中国科学引文数据库(CSCD)期刊
CAB International 收录期刊
美国《生物学文摘》收录期刊
美国《化学文摘》(CA)收录期刊

首页 (/) 期刊介绍 编委会 投稿须知 期刊订阅 广告合作 联系我们 返回主站
(/Corp/10.aspx) (/Corp/3600.aspx) (/Corp/5006.aspx) (/Corp/50.aspx) (http://www.haasep.cn/)

«上一篇 (DArticle.aspx?type=view&id=201401030)
下一篇 (DArticle.aspx?type=view&id=201401032)



PDF下载 (pdfdown.aspx?Sid=201401031)
+分享 (http://www.jiathis.com/share?uid=1541069)



[1]尹学哲,金延华,王玉娇,等.大豆异黄酮和皂甙对D-氨基半乳糖所致肝损伤小鼠肝脏抗氧化活力的影响[J].大豆科学,2014,33(01):139-141.[doi:10.11861/j.issn.1000-9841.2014.01.0139]
YIN Xuezhe,JIN Yanhua,WANG Yujiao,et al.Effects of Soy Isoflavones and Saponins on Hepatic Antioxidative Activity of Mice with Acute Liver Injury Induced by D galactosamine[J].Soybean Science,2014,33(01):139-141.[doi:10.11861/j.issn.1000-9841.2014.01.0139]

点击复制

大豆异黄酮和皂甙对D-氨基半乳糖所致肝损伤小鼠肝脏抗氧化活力的影响

《大豆科学》 [ISSN:1000-9841 /CN:23-1227/S] 卷: 第33卷 期数: 2014年01期 页码: 139-141 栏目:
出版日期: 2014-02-25

Title: Effects of Soy Isoflavones and Saponins on Hepatic Antioxidative Activity of Mice with Acute Liver Injury Induced by D galactosamine

文章编号: 1000-9841 (2014) 01-0139-03

作者: 尹学哲¹ (KeySearch.aspx?type=Name&Sel=尹学哲); 金延华¹ (KeySearch.aspx?type=Name&Sel=金延华); 王玉娇² (KeySearch.aspx?type=Name&Sel=王玉娇); 全吉淑² (KeySearch.aspx?type=Name&Sel=全吉淑)

1. 延边大学附属医院, 吉林 延吉 133000; 2. 延边大学 医学院, 吉林 延吉 133000

Author(s): YIN Xuezhe¹ (KeySearch.aspx?type=Name&Sel=YIN Xuezhe); JIN Yanhua¹ (KeySearch.aspx?type=Name&Sel=JIN Yanhua); WANG Yujiao² (KeySearch.aspx?type=Name&Sel=WANG Yujiao); QUAN Jishu² (KeySearch.aspx?type=Name&Sel=QUAN Jishu)

1. Affiliated Hospital of Yanbian University, Yanji 133000, China; 2. Medical College of Yanbian University, Yanji 133000, China

关键词: 大豆 (KeySearch.aspx?type=Keyword&Sel=大豆); 异黄酮 (KeySearch.aspx?type=Keyword&Sel=异黄酮); 皂甙 (KeySearch.aspx?type=Keyword&Sel=皂甙); 肝损伤 (KeySearch.aspx?type=Keyword&Sel=肝损伤); 抗氧化 (KeySearch.aspx?type=Keyword&Sel=抗氧化)

Keywords: Soy (KeySearch.aspx?type=Keyword&Sel=Soy); Isoflavones (KeySearch.aspx?type=Keyword&Sel=Isoflavones); Saponins (KeySearch.aspx?type=Keyword&Sel=Saponins); Liver injury (KeySearch.aspx?type=Keyword&Sel=Liver injury); Antioxidative (KeySearch.aspx?type=Keyword&Sel=Antioxidative)

分类号: R285.5

DOI: 10.11861/j.issn.1000-9841.2014.01.0139 (http://dx.doi.org/10.11861/j.issn.1000-9841.2014.01.0139)

文献标志码: A

摘要: 为研究大豆异黄酮和皂甙对D-氨基半乳糖(GaIn)所致小鼠急性肝损伤的保护作用以及对肝脏抗氧化活力的影响,将试验小鼠随机分为正常组、模型组、大豆异黄酮组、大豆皂甙组及联苯双脂组(阳性对照组)。每日给药1次,连续7d。试验末期,腹腔注射GaIn建立小鼠急性肝损伤模型,比色法检测血清谷丙转氨酶(ALT)、谷草转氨酶(AST)、白蛋白(ALB)以及肝脏过氧化脂质(LOOH)、丙二醛(MDA)、还原型谷胱甘肽(GSH)含量和超氧化物歧化酶(SOD)、过氧化氢酶(CAT)、谷胱甘肽过氧化物酶(GPx)活性。结果表明:大豆异黄酮和皂甙降低GaIn所致急性肝损伤小鼠血清ALT和AST活性,增高血清ALB水平,减少肝LOOH和MDA含量,升高肝组织GSH水平和SOD、CAT、GPx活性。大豆异黄酮和皂甙对GaIn所致小鼠急性肝损伤具有保护作用,其机制可能与抗氧化作用有关。

Abstract: For the purpose of studying the protective effect of soy isoflavones and saponins on acute liver injury induced by D galactosamine(GaIn) in mice, the experimental mice were randomly assigned to the normal control, model control, soy isoflavone, saponin and bifendate(positive control) groups. Animals were treated once daily for 7 days. GaIn were given intraperitoneally to the mice of groups, and then the alanine aminotransferase (ALT), aspartate aminotransferase (AST), albumin (ALB), lipid hydroperoxide (LOOH), malondialdehyde (MDA), reduced glutathione (GSH), superoxide dismutase (SOD), catalase (CAT) and glutathione peroxidase (GPx) were detected by the colorimetric method. The administration with soy isoflavones and saponins reduced the serum ALT and AST activities, increased the serum ALB level, decreased the hepatic LOOH and MDA contents, and increased the SOD, CAT, GPx and GSH levels of liver in mice with acute liver injury. It is suggested that soy isoflavones and saponins have protective effects on acute liver injury induced by GaIn in mice, probably via antioxidative activity.

参考文献/References:

- [1] 许惠仙, 汪霞, 金延华, 等. 大豆异黄酮和皂甙对肝癌前病变大鼠血清标志酶及抗氧化活性的影响[J]. 大豆科学, 2012, 31(1): 82-84. (Xu H X, Wang X, Jin Y H, et al. Effect of soybean isoflavones and saponins on serum marker enzymes and antioxidative activities of rat with hepatic preneoplasia[J]. Soybean Science, 2012, 31(1): 82-84.)
- [2] 赵育芳, 张永生, 徐珊, 等. 大豆异黄酮对实验性肝纤维化大鼠肝星状细胞活化的影响[J]. 营养学报, 2010, 32(3): 295-296. (Zhao Y F, Zhang Y S, Xu S, et al. The inhibitory effect of soybean isoflavones on activation of hepatic stellate cell in experimental hepatic fibrosis rats[J]. Acta Nutrimenta Sinica, 2010, 32(3): 295-296.)
- [3] 杨丽娜, 郭英, 陈秋丽, 等. 大豆复合物对四氯化碳致大鼠肝损伤的防护作用[J]. 中国老年学杂志, 2009, 29(3): 559-560. (Yang L N, Guo Y, Chen Q L, et al. Effect of soybean compounds on liver injury induced by carbon tetrachloride in rats[J]. Chinese Journal of Gerontology, 2009, 29(3): 559-560.)

- [4] 李建芳, 陈必成, 余震, 等. 染料木素对硫代乙酰胺诱导的肝纤维化大鼠PDGF-BB表达的影响[J]. 肝胆胰外科杂志, 2009, 21(2):118-121, 125. (Li J F, Chen B C, Yu Z, et al. Effect of genistein on the expression of PDGF-BB in hepatic fibrosis of rats induced by thioacetamide[J]. Journal of Hepatopancreatobiliary Surgery, 2009, 21(2):118-121, 125.)
- [5] 杨修仕. 大豆皂苷对急性酒精性肝损伤的保护作用研究[D]. 太原: 山西大学, 2011. (Yang X S. Protective effects of soyasaponins on acute alcohol-induced liver damage[D]. Taiyuan: Shanxi University, 2011.)
- [6] 李迪, 申锦源, 赵薇, 等. 草苈萜环醚萜对D-氨基半乳糖所致急性肝损伤小鼠肝组织抗氧化活性的影响[J]. 延边大学学报, 2012, 35(2):97-100. (Li D, Shen H Y, Zhao W, et al. Effects of the Boschniakia rossica Terpenoids on hepatic antioxidative function of mice injured by D-galactosamine[J]. Journal of Medical Science Yanbian University, 2012, 35(2):97-100.)
- [7] 宋志伟, 吴艳玲, 朴惠善. 桦褐孔菌对小鼠急性肝组织损伤的保护作用[J]. 延边大学学报, 2007, 30(1):34-36. (Song Z W, Wu Y L, Piao H S. Protective effects of extracts of *Inonotus obliquus* on acute hepatic failure in mice[J]. Journal of Medical Science Yanbian University, 2007, 30(1):34-36.)
- [8] 张红, 史天陆, 王静, 等. 五乙酰萜环醚萜对D-GalN所致小鼠急性肝损伤的保护作用[J]. 安徽医科大学学报, 2013, 48(7):786-789. (Zhang H, Shi T L, Wang J, et al. Protective effect of GP-Ac-aniline on acute liver injury induced by D-galactosamine in mice[J]. Acta Universitatis Medicinalis Anhui, 2013, 48(7):786-789.)
- [9] 吕俊兰, 李仙义, 袁海龙, 等. 波棱甲素纳米混悬剂对D-半乳糖胺诱导的小鼠急性肝损伤的保护作用[J]. 中国药理学杂志, 2011, 46(24):1898-1901. (Lyu J L, Li X Y, Yuan H L, et al. Protective effect of herpetrione nanosuspension against acute liver injury induced by D-galactosamine in mice[J]. Chinese Pharmaceutical Journal, 2011, 46(24):1898-1901.)
- [10] 李勤勤, 耿欣. 精制玉米麸皮对小鼠肝损伤的预防保护作用研究[J]. 中国食品学报, 2011, 11(5):7-14. (Li Q Q, Geng X. Study on the protective effect of refined corn bran on liver injury in mice[J]. Journal of Chinese Institute of Food Science and Technology, 2011, 11(5):7-14.)

相似文献/References:

- [1] 刘章雄, 李卫东, 孙石, 等. 1983~2010年北京大豆育成品种的亲本地理来源及其遗传贡献[J]. (article.aspx?type=view&id=201301001) 大豆科学, 2013, 32(01):1. [doi:10.3969/j.issn.1000-9841.2013.01.002]
LIU Zhang-xiong, LI Wei-dong, SUN Shi, et al. Geographical Sources of Germplasm and Their Nuclear Contribution to Soybean Cultivars Released during 1983 to 2010 in Beijing[J]. Soybean Science, 2013, 32(01):1. [doi:10.3969/j.issn.1000-9841.2013.01.002]
- [2] 李彩云, 余永亮, 杨红旗, 等. 大豆脂质转运蛋白基因GmLTP3的特征分析[J]. (article.aspx?type=view&id=201301002) 大豆科学, 2013, 32(01):8. [doi:10.3969/j.issn.1000-9841.2013.01.003]
LI Cai-yun, YU Yong-liang, YANG Hong-qi, et al. Characteristics of a Lipid-transfer Protein Gene GmLTP3 in Glycine max[J]. Soybean Science, 2013, 32(01):8. [doi:10.3969/j.issn.1000-9841.2013.01.003]
- [3] 王明霞, 崔晓霞, 薛晨晨, 等. 大豆耐盐基因GmHAL3a的克隆及RNAi载体的构建[J]. (article.aspx?type=view&id=201301003) 大豆科学, 2013, 32(01):12. [doi:10.3969/j.issn.1000-9841.2013.01.004]
WANG Ming-xia, CUI Xiao-xia, XUE Chen-chen, et al. Cloning of Halotolerance 3 Gene and Construction of Its RNAi Vector in Soybean (*Glycine max*) [J]. Soybean Science, 2013, 32(01):12. [doi:10.3969/j.issn.1000-9841.2013.01.004]
- [4] 张春宝, 李玉秋, 彭宝, 等. 线粒体ISSR与SCAR标记鉴定大豆细胞质雄性不育系与保持系[J]. (article.aspx?type=view&id=201301005) 大豆科学, 2013, 32(01):19. [doi:10.3969/j.issn.1000-9841.2013.01.005]
ZHANG Chun-bao, LI Yu-qiu, PENG Bao, et al. Identification of Soybean Cytoplasmic Male Sterile Line and Maintainer Line with Mitochondrial ISSR and SCAR Markers[J]. Soybean Science, 2013, 32(01):19. [doi:10.3969/j.issn.1000-9841.2013.01.005]
- [5] 卢清瑶, 赵琳, 李冬梅, 等. RAV基因对拟南芥和大豆不定芽再生的影响[J]. (article.aspx?type=view&id=201301006) 大豆科学, 2013, 32(01):23. [doi:10.3969/j.issn.1000-9841.2013.01.006]
LU Qing-yao, ZHAO Lin, LI Dong-mei, et al. Effects of RAV gene on Shoot Regeneration of Arabidopsis and Soybean [J]. Soybean Science, 2013, 32(01):23. [doi:10.3969/j.issn.1000-9841.2013.01.006]
- [6] 杜景红, 刘丽君. 大豆fad3c基因沉默载体的构建[J]. (article.aspx?type=view&id=201301007) 大豆科学, 2013, 32(01):28. [doi:10.3969/j.issn.1000-9841.2013.01.007]
DU Jing-hong, LIU Li-jun. Construction of fad3c Gene Silencing Vector in Soybean[J]. Soybean Science, 2013, 32(01):28. [doi:10.3969/j.issn.1000-9841.2013.01.007]
- [7] 张力伟, 樊颖伦, 牛腾飞, 等. 大豆“冀黄13”突变体筛选及突变体库的建立[J]. (article.aspx?type=view&id=201301008) 大豆科学, 2013, 32(01):33. [doi:10.3969/j.issn.1000-9841.2013.01.008]
ZHANG Li-wei, FAN Ying-lun, NIU Teng-fei, et al. Screening of Mutants and Construction of Mutant Population for Soybean Cultivar "Jihuang13" [J]. Soybean Science, 2013, 32(01):33. [doi:10.3969/j.issn.1000-9841.2013.01.008]
- [8] 盖江南, 张彬彬, 吴昊, 等. 大豆不定胚悬浮培养基因型筛选及基因枪遗传转化的研究[J]. (article.aspx?type=view&id=201301009) 大豆科学, 2013, 32(01):38. [doi:10.3969/j.issn.1000-9841.2013.01.009]
GAI Jiang-nan, ZHANG Bin-bin, WU Yao, et al. Screening of Soybean Genotypes Suitable for Suspension Culture with Adventitious Embryos and Genetic Transformation by Particle Bombardment[J]. Soybean Science, 2013, 32(01):38. [doi:10.3969/j.issn.1000-9841.2013.01.009]
- [9] 王鹏飞, 刘丽君, 唐晓飞, 等. 适于体细胞胚发生的大豆基因型筛选[J]. (article.aspx?type=view&id=201301010) 大豆科学, 2013, 32(01):43. [doi:10.3969/j.issn.1000-9841.2013.01.010]
WANG Peng-fei, LIU Li-jun, TANG Xiao-fei, et al. Screening of Soybean Genotypes Suitable for Somatic Embryogenesis [J]. Soybean Science, 2013, 32(01):43. [doi:10.3969/j.issn.1000-9841.2013.01.010]
- [10] 刘德兴, 年海, 杨存义, 等. 耐酸铝大豆品种资源的筛选与鉴定[J]. (article.aspx?type=view&id=201301011) 大豆科学, 2013, 32(01):46. [doi:10.3969/j.issn.1000-9841.2013.01.011]
LIU De-xing, NIAN Hai, YANG Cun-yi, et al. Screening and Identifying Soybean Germplasm Tolerant to Acid Aluminum [J]. Soybean Science, 2013, 32(01):46. [doi:10.3969/j.issn.1000-9841.2013.01.011]
- [11] 张晶莹, 孙君明, 李斌, 等. 高效液相色谱法快速检测饲料中大豆异黄酮的主要组分含量[J]. (article.aspx?type=view&id=201304020) 大豆科学, 2013, 32(04):530. [doi:10.11861/j.issn.1000-9841.2013.04.0530]
ZHANG Jing-ying, SUN Jun-ming, LI Bin, et al. A Rapid Method for Determination of Soybean Isoflavone Components in Feeds by HPLC[J]. Soybean Science, 2013, 32(04):530. [doi:10.11861/j.issn.1000-9841.2013.04.0530]
- [12] 梁晓芳, 王步军. 大豆中异黄酮和皂甙的提取、制备研究进展[J]. (article.aspx?type=view&id=201401029) 大豆科学, 2014, 33(01):128. [doi:10.11861/j.issn.1000-9841.2014.01.0128]
LIANG Xiao-fang, WANG Bu-jun. Research Progress of Extraction and Preparation Methods of Soybean Isoflavones and Soyasaponins [J]. Soybean Science, 2014, 33(01):128. [doi:10.11861/j.issn.1000-9841.2014.01.0128]
- [13] 许惠仙, 汪霞, 金延华, 等. 大豆异黄酮和皂甙对肝癌前病变大鼠血清标志酶及抗氧化活性的影响[J]. (article.aspx?type=view&id=201201027) 大豆科学, 2012, 31(01):124. [doi:10.3969/j.issn.1000-9841.2012.01.028]
XU Hui-xian, WANG Xia, JIN Yan-hua, et al. Effect of Soybean Isoflavones and Saponins on Serum Marker Enzymes and Antioxidative Activities of Rat with Hepatic Preneoplasia [J]. Soybean Science, 2012, 31(01):124. [doi:10.3969/j.issn.1000-9841.2012.01.028]
- [14] 赵文玺, 汪霞, 金爱花, 等. 大豆异黄酮和皂甙对大鼠肝癌诱发初期肝脏氧化应激的干预作用[J]. (article.aspx?type=view&id=201204032) 大豆科学, 2012, 31(04):675. [doi:10.3969/j.issn.1000-9841.2012.04.032]
ZHAO Wen-xi, WANG Xia, JIN Ai-hua, et al. Effect of Soybean Isoflavones and Saponins on Hepatic Oxidative Stress of Rats in Early Stage of Hepatocarcinogenesis [J]. Soybean Science, 2012, 31(04):675. [doi:10.3969/j.issn.1000-9841.2012.04.032]
- [15] 全吉淑, 许惠仙, 李天, 等. 大豆胚体外诱导结肠癌细胞分化的研究[J]. (article.aspx?type=view&id=201001029) 大豆科学, 2010, 29(01):121. [doi:10.11861/j.issn.1000-9841.2010.01.0121]

QUAN Ji-shu, XU Hui-xian, LI Tian, et al. Effect of Soybean Hypocotyls on Differentiation of Colon Carcinoma Cell HT-29 in vitro[J]. Soybean Science, 2010, 29(01):121. [doi:10.11861/j.issn.1000-9841.2010.01.0121]

[16] 金明, 李天, 刘淑萍, 等. 大豆异黄酮甙元抗脂质过氧化作用的研究[J]. (article.aspx?type=view&id=200905033) 大豆科学, 2009, 28(05):909. [doi:10.11861/j.issn.1000-9841.2009.05.0909]

JIN Ming, LI Tian, LIU Shu-ping, et al. Anti-lipid Peroxidative Effect of Soybean Isoflavone Aglycones[J]. Soybean Science, 2009, 28(01):909. [doi:10.11861/j.issn.1000-9841.2009.05.0909]

[17] 汪霞, 许惠仙, 全吉淑, 等. 大豆异黄酮甙元对结肠癌HT-29细胞增殖和凋亡的影响[J]. (article.aspx?type=view&id=200902029) 大豆科学, 2009, 28(02):310. [doi:10.11861/j.issn.1000-9841.2009.02.0310]

WANG Xia, XU Hui-xian, QUAN Ji-shu, et al. Effect of Soybean Isoflavone Aglycones on Proliferation and Apoptosis of Colon Carcinoma Cell HT[J]. Soybean Science, 2009, 28(01):310. [doi:10.11861/j.issn.1000-9841.2009.02.0310]

[18] 金梅花, 许惠仙, 金花, 等. 大豆异黄酮和皂甙对结肠癌细胞增殖和凋亡的研究[J]. (article.aspx?type=view&id=200806026) 大豆科学, 2008, 27(06):1028. [doi:10.11861/j.issn.1000-9841.2008.06.1028]

JIN Mei-hua, XU Hui-xian, JIN Hua, et al. Effect of Soybean Isoflavones and Saponins on Proliferation and Apoptosis of Human Colon Carcinoma Cell Line Ht-29[J]. Soybean Science, 2008, 27(01):1028. [doi:10.11861/j.issn.1000-9841.2008.06.1028]

[19] 尹学哲, 许惠仙, 金花. 大豆异黄酮和皂甙对糖尿病大鼠脂蛋白氧化修饰的抑制作用[J]. (article.aspx?type=view&id=200801034) 大豆科学, 2008, 27(01):170. [doi:10.11861/j.issn.1000-9841.2008.01.0170]

YIN Xue-zhe, XU Hui-xian, and JIN Hua. Inhibition of Soybean Isoflavones and Saponins on Oxidation of Lipoproteins in Diabetic Rats[J]. Soybean Science, 2008, 27(01):170. [doi:10.11861/j.issn.1000-9841.2008.01.0170]

[20] 杨雪峰, 齐宁, 林红, 等. 不同类型大豆蛋白质、脂肪含量与异黄酮含量的相关性研究[J]. (article.aspx?type=view&id=200705013) 大豆科学, 2007, 26(05):705. [doi:10.3969/j.issn.1000-9841.2007.05.013]

YANG Xue-feng, QI Ning, LIN Hong, et al. CORRELATION BETWEEN ISOFLAVONES CONTENT AND PROTEIN AND OIL CONTENT IN DIFFERENT SOYBEAN GERMPLEASMS[J]. Soybean Science, 2007, 26(01):705. [doi:10.3969/j.issn.1000-9841.2007.05.013]

备注/Memo 基金项目: 国家自然科学基金(30360113, 81160539)。

第一作者简介: 尹学哲(1962-), 男, 博士, 教授, 主要从事分子肿瘤学研究。Email:yinxz@ybu.edu.cn。

通讯作者: 全吉淑(1968-), 女, 硕士, 教授, 主要从事中药药理学研究。Email:quanjs@ybu.edu.cn。

更新日期/Last Update: 2014-08-04