

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=200704026)
下一篇 (DArticle.aspx?type=view&id=200704028)



PDF下载 (pdfdown.aspx?Sid=200704027)

+分享
(http://www.jiathis.com/share?uid=1541069)



微信公众号: 大豆科学

[1]刘利新,华菁,任申玥,等.降解大豆分离蛋白AMPS接枝共聚物的合成与表征[J].大豆科学,2007,26(04):591-596.
[doi:10.3969/j.issn.1000-9841.2007.04.027]
LIU Li-xin,HUA Jing,REN Shen-yue,et al.SYNTHESIS AND CHARACTERIZATION OF GRAFT COPOLYMERS OF HYDROLYTIC SOY PROTEIN ISOLATED AND AMPS[J].Soybean Science,2007,26(04):591-596.[doi:10.3969/j.issn.1000-9841.2007.04.027]

点击复制

降解大豆分离蛋白AMPS接枝共聚物的合成与表征

《大豆科学》 [ISSN:1000-9841 /CN:23-1227/S] 卷: 第26卷 期数: 2007年04期 页码: 591-596 栏目:
出版日期: 2007-08-25

Title: SYNTHESIS AND CHARACTERIZATION OF GRAFT COPOLYMERS OF HYDROLYTIC SOY PROTEIN ISOLATED AND AMPS

文章编号: 1000-9841(2007)04-0591-06

作者: 刘利新 (KeySearch.aspx?type=Name&Sel=刘利新); 华菁 (KeySearch.aspx?type=Name&Sel=华菁); 任申玥 (KeySearch.aspx?type=Name&Sel=任申玥); 刘燕 (KeySearch.aspx?type=Name&Sel=刘燕); 陈明清 (KeySearch.aspx?type=Name&Sel=陈明清); 杨成 (KeySearch.aspx?type=Name&Sel=杨成); 刘晓亚 (KeySearch.aspx?type=Name&Sel=刘晓亚)

江南大学化学与材料工程学院, 无锡 214122

Author(s): LIU Li-xin (KeySearch.aspx?type=Name&Sel=LIU Li-xin); HUA Jing (KeySearch.aspx?type=Name&Sel=HUA Jing); REN Shen-yue (KeySearch.aspx?type=Name&Sel=REN Shen-yue); LIU Yan (KeySearch.aspx?type=Name&Sel=LIU Yan); CHEN Ming-qing (KeySearch.aspx?type=Name&Sel=CHEN Ming-qing); YANG Cheng (KeySearch.aspx?type=Name&Sel=YANG Cheng); LIU Xiao-ya (KeySearch.aspx?type=Name&Sel=LIU Xiao-ya)
Department of Chemical and Material Engineering of Southern Yangtze University, Wuxi 214122

关键词: 大豆分离蛋白 (KeySearch.aspx?type=Keyword&Sel=大豆分离蛋白); 降解 (KeySearch.aspx?type=Keyword&Sel=降解); 接枝共聚 (KeySearch.aspx?type=Keyword&Sel=接枝共聚); 2-丙烯酰胺基-2-甲基丙磺酸 (KeySearch.aspx?type=Keyword&Sel=2-丙烯酰胺基-2-甲基丙磺酸); 溶液性能 (KeySearch.aspx?type=Keyword&Sel=溶液性能)

Keywords: Soy protein Isolated (KeySearch.aspx?type=Keyword&Sel=Soy protein Isolated); Hydrolysis (KeySearch.aspx?type=Keyword&Sel=Hydrolysis); Graft copolymerization (KeySearch.aspx?type=Keyword&Sel=Graft copolymerization); 2-Acrylamido-2-methyl propane sulfonic acid (KeySearch.aspx?type=Keyword&Sel=2-Acrylamido-2-methyl propane sulfonic acid)

分类号: Q816 S565.1

DOI: 10.3969/j.issn.1000-9841.2007.04.027 (http://dx.doi.org/10.3969/j.issn.1000-9841.2007.04.027)

文献标志码: A

摘要: 利用酸性蛋白酶对大豆分离蛋白(SPI)进行降解,得到一系列降解大豆分离蛋白(HSPI)。以过硫酸铵为引发剂、2-巯基乙醇为蛋白质变性剂,在浓度为8 mol/L尿素溶液中进行HSPI与水性单体2-丙烯酰胺基-2-甲基丙磺酸(AMPS)的接枝共聚,得到接枝产物(HSPI-g-PAMPS)。研究了水解度、引发剂用量、反应时间和单体用量对接枝率和接枝效率的影响,并对HSPI和HSPI-g-PAMPS的溶液性能进行了研究。结果表明:HSPI-g-PAMPS的Zeta电位明显降低、在低剪切速率下HSPI-g-PAMPS的粘度最大。

Abstract: A series of the hydrolytic Soy Proteins Isolated (HSPIs) were obtained by the enzymatic hydrolysis of Soybean Protein Isolated (SPI) using the acid proteolytic enzyme. The graft copolymers (HSPI-g-PAMPS) of the hydrolytic Soybean Protein Isolated (HSPI) and AMPS had been prepared in 8 mol/L urea aqueous solution under nitrogen atmosphere, using ammonium persulfate (APS) as an initiator, β -mercaptoethanol (ME) as a protein unfolding agent. Evidence of HSPI-g-PAMPS was obtained by comparison of IR Spectro of HSPI and HSPI-g-PAMPS. The effect of time, initiator concentration, degree of hydrolysis and monomer concentration on the graft copolymerization have been studied. The properties of HSPI-g-PAMPS have been characterized and it was shown that the Zeta-potential of HSPI-g-PAMPS was lowest than HSPI. Besides, the viscosity of HSPI-g-PAMPS was the highest under the low cut rate.

参考文献/References:

- [1] Kalapathy U, Hettiarachchy NS, Rhee KC. Effect of drying methods on molecular properties and functionalities of disulfide bond 2 cleaved soy proteins [J]. Journal of American Oil Chem Society, 1997, 74: 195-199.
- [2] Barman BG. Modification of physical properties of soy protein isolate by acetylation [J]. Journal of Agricultural and Food Chemistry, 1997, 25: 618-641.
- [3] Kim SH, Kinsella JE. Surface active properties of food proteins: effects of reduction of disulfide bonds on film properties and foam stability of glycinin [J]. Journal of Food Science, 1987, 52: 128-131.
- [4] 唐传核, 彭志英. 大豆蛋白水解物的苦味以及脱出方法进展 [J]. 中国油脂, 2000, 25(6): 1673.
- [5] 陈海敏, 华欲飞. 大豆蛋白产品的功能及在化妆品中的应用 [J]. 日用化学工业, 2000, 12(6): 626.
- [6] 刘玉环, 蒋启海. 耐水性大豆基木材胶粘剂两步法工艺研究 [J]. 大豆科学, 2006, 3: 259-264.
- [7] Dong QZ, You-Lo Hsieh. Acrylonitrile graft copolymerization of casein proteins for enhanced solubility and thermal properties [J]. Journal of Applied Polymer Science, 2000, 77: 2543-2551.
- [8] Bhalchandra S, Lele, Hironobu Murata, Krzysztof Matyjaszewski. Synthesis of uniform protein-polymer conjugates [J]. Biomacromolecules, 2005, 6: 3380-3387.
- [9] Dong LX, Yang C, Liu XY. Graft polymerization of styrene on soy protein isolate [J]. Journal of Applied Polymer Science, 2005, 98: 1457.
- [10] 徐玉兰, 杨成, 刘晓亚, 等. 大豆分离蛋白的酶水解 [J]. 应用化学, 2005, 22: 557-559.

相似文献/References:

- [1] 郑荣生, 张波, 童军茂, 等. 三种市售大豆蛋白产品理化特性研究[J]. (article.aspx?type=view&id=201301020) 大豆科学, 2013, 32(01):84. [doi:10.3969/j.issn.1000-9841.2013.01.020]
- ZHENG Rong-sheng, ZHANG Bo, TONG Jun-mao, et al. Physicochemical Properties of Three Kinds of Commercial Soybean Protein Products[J]. Soybean Science, 2013, 32(04):84. [doi:10.3969/j.issn.1000-9841.2013.01.020]
- [2] 黄橙子, 王静, 高红亮, 等. 酶法提高大豆分离蛋白酸溶性的研究[J]. (article.aspx?type=view&id=201301026) 大豆科学, 2013, 32(01):111. [doi:10.3969/j.issn.1000-9841.2013.01.026]
- HUANG Cheng-zi, WANG Jing, GAO Hong-liang, et al. Improvement on Acid-solubility of Soy Protein Isolate with Enzymatic Method[J]. Soybean Science, 2013, 32(04):111. [doi:10.3969/j.issn.1000-9841.2013.01.026]
- [3] 葛文静, 华欲飞. 低限度酶解制备低粘度弱苦味的大豆分离蛋白[J]. (article.aspx?type=view&id=201401026) 大豆科学, 2014, 33(01):114. [doi:10.11861/j.issn.1000-9841.2014.01.0114]
- GE Wenjing, HUA Yufei. Limited Enzymatic Hydrolysis of Soybean Protein Isolates to Obtain Hydrolysate with Lower Viscosity and Weaker Bitterness[J]. Soybean Science, 2014, 33(04):114. [doi:10.11861/j.issn.1000-9841.2014.01.0114]
- [4] 孟 滕, 刘丹丹, 李海云, 等. 可食性复合膜制备工艺的研究[J]. (article.aspx?type=view&id=201402025) 大豆科学, 2014, 33(02):277. [doi:10.11861/j.issn.1000-9841.2014.02.0277]
- MENG Teng, LIU Dan-dan, LI Hai-yun, et al. Processing Technology of Edible Composite Membranes[J]. Soybean Science, 2014, 33(04):277. [doi:10.11861/j.issn.1000-9841.2014.02.0277]
- [5] 刘 莹, 刘 政, 赵 杰, 等. 超声波辅助酶法制备大豆抗氧化肽[J]. (article.aspx?type=view&id=201402026) 大豆科学, 2014, 33(02):281. [doi:10.11861/j.issn.1000-9841.2014.02.0281]
- LIU Ying, LIU Zheng, ZHAO Jie, et al. Preparation of Soybean Antioxidant Peptide by Ultrasonic-assisted Enzymatic Method[J]. Soybean Science, 2014, 33(04):281. [doi:10.11861/j.issn.1000-9841.2014.02.0281]
- [6] 胡少新, 江连洲, 许德春, 等. 大豆分离蛋白生产降压肽酶解技术研究[J]. (article.aspx?type=view&id=201104022) 大豆科学, 2011, 30(04):643. [doi:10.11861/j.issn.1000-9841.2011.04.0643]
- HU Shao-xin, JIANG Lian-zhou, XU De-chun, et al. Producing Technology of Antihypertensive Peptide Derived from Soybean Protein Isolated by Enzymatic Method[J]. Soybean Science, 2011, 30(04):643. [doi:10.11861/j.issn.1000-9841.2011.04.0643]
- [7] 闫 晗, 裴尚琪, 葛佩富, 等. 速溶性大豆分离蛋白生产工艺优化[J]. (article.aspx?type=view&id=201206030) 大豆科学, 2012, 31(06):996. [doi:10.3969/j.issn.1000-9841.2012.06.030]
- YAN Han, NIE Jian-qi, GE Pei-fu, et al. Optimization on Production Parameters of Rapid Dissolving Soybean Protein Isolate[J]. Soybean Science, 2012, 31(04):996. [doi:10.3969/j.issn.1000-9841.2012.06.030]
- [8] 雷文. 国内大豆胶粘剂的改性研究进展[J]. (article.aspx?type=view&id=201102034) 大豆科学, 2011, 30(02):328. [doi:10.11861/j.issn.1000-9841.2011.02.0328]
- LEI Wen. Domestic Research on Soybean Adhesives Modification[J]. Soybean Science, 2011, 30(04):328. [doi:10.11861/j.issn.1000-9841.2011.02.0328]
- [9] 王玲琴, 王志耕, 方玉明, 等. 双酶法制备大豆降胆固醇活性肽的研究[J]. (article.aspx?type=view&id=201001026) 大豆科学, 2010, 29(01):109. [doi:10.11861/j.issn.1000-9841.2010.01.0109]
- WANG Ling-qin, WANG Zhi-geng, FANG Yu-ming, et al. Preparation of Soybean Hypocholesterolemic Peptides by Double-protease Method[J]. Soybean Science, 2010, 29(04):109. [doi:10.11861/j.issn.1000-9841.2010.01.0109]
- [10] 雷文, 杨涛, 王考将, 等. 环氧树脂改性大豆基木材胶粘剂的制备与表征[J]. (article.aspx?type=view&id=201001028) 大豆科学, 2010, 29(01):118. [doi:10.11861/j.issn.1000-9841.2010.01.0118]
- LEI Wen, YANG Tao, WANG Kao-jiang, et al. Preparation and Characterization of Bio-adhesive by Modifying Soy Protein Isolate with Epoxy Resin[J]. Soybean Science, 2010, 29(04):118. [doi:10.11861/j.issn.1000-9841.2010.01.0118]

备注/Memo 基金项目: 国家自然科学基金资助项目(NSFC20374025)

作者简介: 刘立新(1982-), 男, 硕士研究生, 从事大豆分离蛋白接枝改性研究。Tel: 013961798581; E-mail: liulixin821027@hotmail.com

通讯作者: 刘晓亚, 教授, 博士生导师, Tel: 0510-89880780, E-mail: lxy@sytu.edu.cn

更新日期/Last Update: 2014-10-21