

酪蛋白水解物的酶法修饰优化与抗氧化活性改善 Enzymatic Modification of Casein Hydrolysates by Plastein Reaction and Improvement in Antioxidant Activity

吴丹 李铁晶 赵新淮

东北农业大学

关键词: 酪蛋白水解物 抗氧化活性 类蛋白反应 响应面分析

摘要: 利用木瓜蛋白酶对酪蛋白水解,并对所得到的水解物进行类蛋白反应修饰,制备高活性抗氧化肽。以水解物的游离氨基含量变化为响应值,利用响应面分析法对类蛋白反应条件进行优化,得到适宜条件为:酶添加量为500U/g,温度30℃,底物质量分数50%,反应时间5.6h。毛细管电泳分析确认,水解物经类蛋白反应修饰后肽分子组成发生变化。抗氧化活性分析结果表明,所制备的3个修饰产物对3种自由基的清除能力显著提高。Casein hydrolysates were prepared by hydrolysis of casein with papain, and then modified by papain-catalyzed plastein reaction to prepare antioxidant peptides with higher activity. Response surface analysis was conducted to optimize the conditions of plastein reaction with the variations of free amino groups in reaction mixture used as index. The optimal conditions obtained were that enzyme addition level was 500U/g, temperature was 30℃, concentration of hydrolysates was 50% and reaction time was 5.6h. The analysis results from capillary electrophoresis confirmed that the peptide compositions of modified products were different from that of casein hydrolysates. The antioxidant activities of three modified products were also analyzed, which indicated that their scavenging activities for three free radicals were enhanced obviously.

[查看全文](#) (请使用Adobe Acrobat 6.0版本浏览) [返回首页](#)

[引用本文](#)