

论文

产 α -半乳糖苷酶乳酸菌的鉴定及其发酵性能研究

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摘要:

从传统乳制品中筛选到2株高产 α -半乳糖苷酶的菌株, 经菌株形态和生理生化特性鉴定以及16S rRNA基因序列分析, 确定为发酵乳酸杆菌和长双歧杆菌, 并命名为LB21和KLDS2.0509。同时研究了2株菌在豆乳中的酶活力、产酸性能、棉子糖降解能力和蛋白水解能力。菌株LB21和KLDS2.0509表现出不同的 α -半乳糖苷酶活力, 其最高酶活力分别为26.8U/mL和31.5U/mL, 发酵终点pH分别为5.1和5.0, 两者均能有效地降解棉子糖, 蛋白水解能力随着发酵时间的增加而增强。

关键词: 乳酸菌 α -半乳糖苷酶 鉴定 发酵特性

Identification of α -galactosidase-producing lactic acid bacteria and their fermentation performance

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Abstract:

Two α -galactosidase-producing strains were obtained from traditional indigenous dairy products. Based on morphological identification, physiological and biochemical characteristics and 16S rRNA gene sequence analysis, these two α -galactosidase-producing strains were identified as Lactobacillus fermentum and Bifidobacterium longum, and coded as LB21 and KLDS2.0509, respectively. Soymilk was fermented with each strain and α -galactosidase activities, production of organic acid, metabolism of oligosaccharides and proteolytic enzymes were assessed during 48h incubation at 37°C. LB21 and KLDS2.0509 exhibited variable α -galactosidase activities, of which the highest activities were 26.8U/mL and 31.5U/mL, and pH values were 5.1 and 5.0 at the end of fermentation respectively. Both LB21 and KLDS2.0509 could effectively degrade soymilk raffinose. The hydrolysis of protein increased with an extension of fermentation time.

Keywords:

lactic acid bacteria α -galactosidase identification fermentation performance

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2. 赵蕊,苏安分,许婷玉,霍贵成*. 酸奶子中乳杆菌生长性能的研究[J]. 山东大学学报(理学版), 2008,43(7): 45-

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3. 胡淑敏,孔 健,季明杰*.产广谱细菌素乳酸菌的筛选[J]. 山东大学学报(理学版), 2008,43(7): 61-64
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