

研究论文

一种乳酸菌多糖对酸乳凝胶的影响机理

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摘要 以乳酸菌菌株和由粘性乳酸菌分泌的胞外多糖为原料制备不同的酸乳凝胶, 并用电子显微镜和质构仪等手段对其微观结构和质构特性进行了观测. 发现在酸乳体系中, 中性乳酸菌多糖与乳酪蛋白是相斥的, 多糖对酸乳凝胶的影响主要是利用其自身分子形成的空间位垒, 干扰酪蛋白微球之间的相互链接方式, 从而动态影响酪蛋白微球立体网状结构的构建. 提出酸乳乳酸菌胞外多糖对酸乳凝胶结构的影响不仅与其分子大小及结构有关, 还与胞外多糖添加到酸乳体系中的方式、时间、速度、浓度有关. 进一步解释了酸乳制作中, 粘性发酵剂所能达到的效果不容易用直接添加增稠剂的方法替代的原因.

关键词 [胞外多糖](#) [酸乳凝胶](#) [空间位垒效应](#) [机理](#)

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Influence Mechanism of a Kind of Exopolysaccharides on Yogurt Curd

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Abstract Different yogurt curd samples were manufactured by lactic acid bacteria strains and their exopolysaccharides, furthermore, the microstructure and texture properties of the samples were measured. The results indicate that, the mechanism of lactic acid exopolysaccharides reacting with yogurt curd mainly was space baffle effect resulting from the size of the neutral exopolysaccharides themselves which were exclusive from casein in yogurt curd, the space baffle effect interrupted the link ways of casein micelles and thereby dynamically influenced the construction of three-dimensional net structure of casein micelle. A novel view point was brought forward that the influence effect of the lactic acid bacteria exopolysaccharides from yogurt on yogurt curds had great things to do not only with the size and structure of exopolysaccharides but also more importantly with the adding ways, time, speed, concentration of exopolysaccharides. Furthermore, the reasons were made clear that the effect of usingropy starter and making a ropy yogurt could not be replaced by adding stabilizer reagents directly.

Key words [Exopolysaccharide](#) [Yogurt curd](#) [Space baffle effect](#) [Mechanism](#)

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