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园艺与食品科学

核酸酶P1高产菌株的选育和产酶条件的优化（英文）

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摘要

以ATCC14994为出发菌株，采用^{60}Co γ-射线与亚硝基胍相结合进行多次诱变育种,获得一株核酸酶P1高产菌株HEP2312。通过正交试验对该突变株的产酶发酵条件进了优化，经优化的发酵产酶条件为: 蔗糖5%, 酵母膏0.3%, 蛋白胨0.3%, K_2HPO_4 0.8%, KH_2PO_4 0.8%, $MgSO_4$ 0.2%, $ZnSO_4$ 0.2%, 培养基起始pH 6.0, 接种量10%, 培养温度30℃,摇床转速120 r/min,发酵时间48 h。在优化条件下，HEP2312的产酶水平达1 508 U/mL。

关键词 核酸酶P1 诱变育种 正交试验 产酶条件 优化

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Selection of Biochemical Mutants that Overproduce Nuclease P1 and Optimization of the Fermentation Conditions

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Abstract

Based on the means of mutations with ^{60}Co γ-ray and nitrosoguanidine (NTG), A high nuclease P1-producing strain HEP2312 was successfully screened when the original strain ATCC14994 treated by the method of repeat selection. Medium for fermentation and conditions were optimized by single factor and orthogonal experiments. The results showed the enzyme preparation contained a nuclease P1 activity of 1 508 U/mL, when the mutant strain was cultivated with 30℃, initial pH at 6.0, rotary shaker at 120 r/min, for 48 h, and in the medium consisted of 5.0% sugar, 0.3% yeast extract, 0.3% peptone, 0.6% K_2HPO_4, 0.6% KH_2PO_4, 0.2% $MgSO_4$ and 0.2%$ZnSO_4$.

Key words nuclease P1 mutation orthogonal experiment fermentation optimization

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