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6株酵母菌产营养活性物质能力的比较分析

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Comparative Analysis on the Capacities of Producing Nutricines

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- 摘要
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摘要 本试验旨在为后期反刍动物微生态制剂研制筛选出高活性酵母菌株。试验测定了6株酵母菌[产阮假丝酵母(*Candida utilis*)BY、产假丝酵母(*Candida tropicalis*)BR、热带假丝酵母B2、酿酒酵母(*Saccharomyces cerevisiae*)YR、酿酒酵母YC和酿酒酵母BC]产营养活性物质(β -葡聚糖、甘露聚糖、有机酸、氨基酸和多肽)的能力,并使用DPS 14.10软件运用Topsis法对试验数据进综合标分析。结果表明:热带假丝酵母BR产 β -葡聚糖、甘露聚糖能力最强,其细胞壁中 β -葡聚糖、甘露聚糖含量分别为80.2 mg/g;产阮假丝酵母BY产有机酸能力最强,其培养液中总有机酸含量为344.46 μ g/mL;酿酒酵母BC产多肽能力最强,其多肽含量为14.08 mg/dL。多指标综合分析结果表明最优菌株为热带假丝酵母BR,其产 β -葡聚糖、甘露聚糖、丁二酸、谷氨酰胺的能力均最强,其细胞壁中 β -葡聚糖、甘露聚糖含量分别为80.2、60.5 mg/g,培养液中总有机酸、总氨基酸含量分别达312.11 μ g/mL、4.705 mg/g。通过6株酵母菌产营养活性物质能力综合比较分析得出最优菌株为热带假丝酵母BR。

关键词: 酵母菌 营养活性物质 反刍动物微生态制剂

Abstract: This experiment was conducted to find out the high activity strains for the development of ruminant microecological agents in latter. The capacities of producing nutricines (β -glucan, mannan, organic acids, succinic acid and polypeptides) for 6 yeasts (*Candida utilis* BY, *Candida tropicalis* BR, *Candida tropicalis* B2, *Saccharomyces cerevisiae* YR, *Saccharomyces cerevisiae* YC and *Saccharomyces cerevisiae* BC) were determined and the indices synthetical analysis was used to analyze experimental data by Topsis method in DPS 14.10 software. Results showed as follows: the capacities of producing β -glucan and mannan of *Candida tropicalis* BR were strongest, and the contents of β -glucan and mannan in cell wall of *Candida tropicalis* BR were 80.2 and 60.5 mg/g respectively; the capacity of producing organic acids of *Candida utilis* BY was the strongest, and the content of total organic acids in culture of *Candida utilis* BY reached 344.46 μ g/mL; the capacity of producing polypeptides of *Saccharomyces cerevisiae* BC was the strongest, and the content of polypeptides was 14.08 mg/dL. Multisynthetic analysis results showed that the optimal strain was *Candida tropicalis* BR, and it had the strongest capacities of producing β -glucan and mannan, succinic acid, glutamic acid and cysteine. The contents of succinic acid and mannan in cell wall of *Candida tropicalis* BR were 80.2 and 60.5 mg/g, respectively, and the contents of succinic acid and total amino acids in culture of *Candida tropicalis* BR were up to 312.11 μ g/mL and 4.705 mg/g respectively. The optimal strain with the highest capacities of producing nutricines is *Candida tropicalis* BR yeasts by comprehensive comparative analysis.

Keywords: yeast, nutricines, ruminant microecological agent

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