The use of dilution rate cycling to stabilise recombinant plasmids in continuous culture of recombinant *Saccharomyces cerevisiae*

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Received 23 May 1995;
Revised 27 October 1995;
accepted 27 October 1995.
Available online 20 February 2002.

Abstract

The use of dilution rate cycling to stabilise multiple copies of recombinant plasmid pLG669-z in continuous culture of recombinant *Saccharomyces cerevisiae* over different amplitudes and different frequencies of cycling was studied. Nutrient concentrations in the feed were maintained at constant values. In the first set of experiments, the cycling amplitudes were varied over a dilution rate range of 0.1 h^{-1} to 0.4 h^{-1} at a constant cycling frequency of 3 h. In the second set of experiments, the cycling frequencies were varied between 4 and 12 h at a constant dilution rate cycling of 0.1 h^{-1} to 0.4 h^{-1}. Plasmid stability was dependent on cycling amplitude and cycling frequency applied in that the plasmid stability was improved with a dilution rate range of 0.1 h^{-1} to 0.3 h^{-1} for a fixed cycling period of 3 h; and with a cycling period of 8 h for a fixed dilution rate range of 0.1 h^{-1} to 0.4 h^{-1}. The cycling amplitude and cycling frequency are important parameters for successful plasmid stabilisation through dilution rate cycling.

Author Keywords: Dilution rate cycling; Plasmid stability; Continuous culture; Recombinant *Saccharomyces cerevisiae*

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