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Discrimination of riboflavin producing *Bacillus subtilis* strains based on their fed-batch process performances on a millilitre scale

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Abstract:

Forty-eight single-use stirred tank bioreactors on a 10-mL scale operated in a magnetically inductive driven bioreaction block and automated with a liquid handler were applied for discrimination of different riboflavin producing *Bacillus subtilis* strains based on their performances in the parallel fed-batch processes. It was shown that a discrimination of the *B. subtilis* riboflavin producer strains can efficiently be achieved within one parallel fermentation run based on the integral riboflavin yield after 48 h. The possibility to perform replicates within the parallel fermentation run allows for a robust statistical analysis and is a prerequisite for the discrimination of producer strains under fed-batch process conditions. Within the estimation error, all of the riboflavin producing *B. subtilis* strains under study showed the same fed-batch process performances on the litre scale compared to the milliliter scale.

Key-words: parallel, fermentation, riboflavin, *Bacillus subtilis*, discrimination, bioreaction block