High-level production of the shLkn-1, short version of human leukotactin-1, by optimization of fermentation process of *Pichia pastoris*

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Abstract

shLkn-1, short version of human leukotactin-1 was cloned and expressed in the methylotrophic yeast *P. Pastoris*. To obtain a large amount of shLkn-1 required for clinical evaluation, various methanol feeding strategy was performed and compared its production level of shLkn-1. It was revealed that methanol feeding using modified DO-stat method showed the highest production level of shLkn-1 due to a stable control of dissolved oxygen level and methanol feed rate. This methanol DO-stat fed-batch culture method was easy to handle of fermentation process and to determine a proper feed rate of glycerol and methanol for a high yield expression. The extension of methanol induction by this feeding method resulted in the expression level of shLkn-1 over 2.0 g/L. The residual methanol concentration was kept below the level of 0.5% (v/v).

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