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Differential gene expression of a feed-spiked super-producing CHO cell line

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Highlights

- First publication to analyze transcriptomic response to the addition of nutrients
- Feed-spiking boosted mAb production rates 3-fold (0.8 g/L vs. 2.4 g/L)
- The viable cell integral remained comparable in both cultures
- Substantially enhanced production capacity was analyzed by transcriptomics
- Several biochemical pathways and novel gene targets for protein expression were identified

Abstract

Feed supplements are concentrated cell culture media that contain a variety of nutrients, which can be added during a bioprocess. During fed-batch cultivation, feed media are typically added to a growing cell culture to maximize cell and product concentrations. In this study, only a single shot of feed medium was added on day 0 to a basal cell culture medium and compared to non-supplemented basal medium (feed-spiked at day 0 versus control experiments) by cultivation of a recombinant mAb