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Sommario/riassunto	Long description: Amongst the mammalian producer cell lines, the Chinese hamster ovary (CHO) cell lines are of predominant importance in biopharmaceutical production. Thus, novel factors increasing overall productivity are sought and bear the potential to reduce the unit costs of a production process. Furthermore, the current patent situation for several therapeutic proteins demands innovative tools to at least maintain or preferentially increase the cost-effectiveness of their production processes. In this thesis, hitherto unknown factors were revealed by next generation sequencing of chemically mutated and selected CHO-K1 suspension cell lines. Two factors were proven to improve CHO-based production processes: cgrSnord78 and cgrTtc36. The Cricetulus griseus Ttc36 increases the integral as well as the maximal viable cell density and abolishes the cell-cell aggregation whilst cgrSnord78 improves the specific as well as volumetric productivity without significant impact on cell growth. Based on the

present results and discussion, foundations for future research on these functionally unrevealed factors are laid. Hence, this work represents the first step towards the application of the genuine biomolecules cgrTtc36 and cgrSnord78 in biopharmaceutical protein production.