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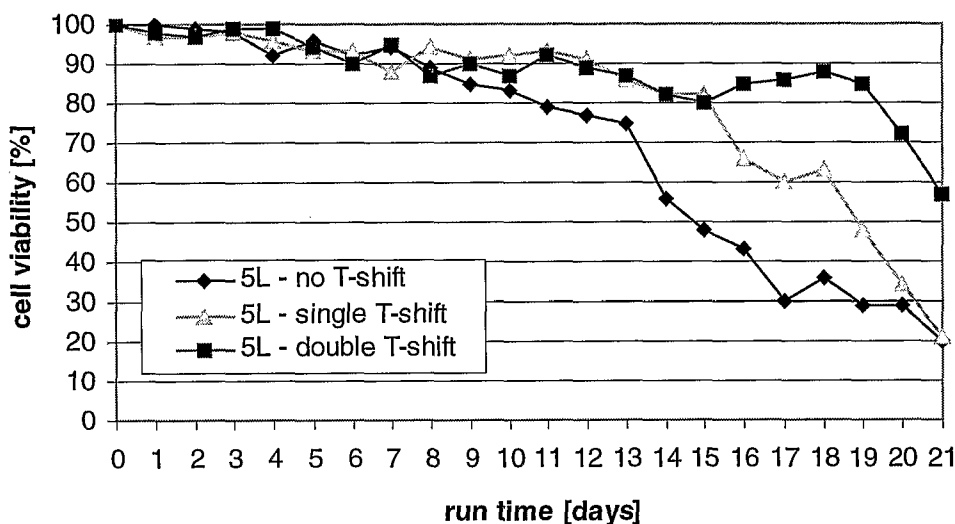
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(54) Title: MAMMALIAN CELL CULTURE PROCESSES FOR PROTEIN PRODUCTION



(57) Abstract: The present invention describes methods and processes for the production of proteins, particularly glycoproteins, by animal cell or mammalian cell culture, preferably, but not limited to, fed-batch cell cultures. In one aspect, the methods comprise at least two temperature shifts performed during the culturing period, in which the temperature is lower at the end of the culturing period than at the time of initial cell culture. Throughout their duration, the culturing processes of the invention involving two or more downward shifts in temperature sustain a high viability of the cultured cells, and can yield an increased end titer of protein product, and a high quality of protein product, as determined, e.g., by sialic acid content of the produced protein. In another aspect, the methods comprise the delayed addition of polyanionic compound during the culturing period. The delayed addition of polyanionic compound sustains a high viability of the cultured cells, and can extend the growth phase, delay the onset of the death phase, and arrest the death phase.

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