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- Batch culture is a biotechnological process where all nutrients are supplied in an initial culture medium, and no further nutrients are added to the bioreactor during cultivation. The produced pharmaceutical protein remains in the bioreactor until the end of the run.
- In a fed-batch culture one or more nutrients are added to the bioreactor during cultivation otherwise it is quite similar to a batch culture.

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- High cell densities are crucial for obtaining high protein production rates in bioreactors. Mixing in bioreactors is necessary in order to increase oxygen transfer and provide a homogeneous environment for cell growth. Examples: Stirred tank bioreactor, orbital shaken bioreactor.