Index of dataset

|  |  |  |  |
| --- | --- | --- | --- |
| Chapters | Workbook | Spreadsheets | Contents |
| 1 | 1 | 1 | To showcase the increasing demand of biopharmaceutical drugs and expected growth trend in future w. r.t projected CAGR values of 8.6 and 10.1 |
| 2 | 1 | 1 | To estimate the desired kLa values at different % of air saturation and at different cell densities |
| 2 | Showing the kLa values of different culture systems depending on their mode of aeration in comparison with different % of air saturation for 10 million cells/mL and and at different cell density at 40 % of air saturation |
| 3 | 1 | 1 | To lay the methodology for the revival of a single vial and subculturing of mammalian cells (adherent and suspension) |
| 2 | To define the method for the cryopreservation of mammalian cells (adherent and suspended) |
| 3 | To lay the method for the preparation of the seed inoculum for the production of sACE in HTB |
| 4 | To determine the cell count and % viability of the culture. |
| 5 | To lay the method for the determination of the quality of the sACE through SDS-PAGE  |
| 6 | To identify the sACE protein through western blot |
| 4 | 1 | 1 | Design sheet and Users' requirement specifications (URS) |
| 2 | Impeller immersion ratios |
| 3 | Data for calculating mixing time through conductivity and F (t) curve |
| 4 | Mixing time through conductivity method and modelling |
| 5 | Determination of minimum agitation speed at different impeller immersion ratios from STR model |
| 6 | Determination of minimum agitation speed at different impeller immersion ratios from HTB model |
| 7 | Modelling of oxygen mass transfer (Buckingham Pi method) |
| 8 | Sample example for the determination of mass transfer coefficient (Kla) for 2 L (42 % impeller imersion). |
| 9 | Sample calculations for overall heat transfer coefficient (UA) for HTB at 2 L and 3 L volume |
| 10 | Sample calculation for power utilisation in HTB at 2 L and 3 L with 200 rpm |
| 2 |  | kLa\_analysis (0-80 %) |
| 3 | kLa analysis | .csv file |
| 4 | kLa estimation | Scilab file |
| 5 | 1 | 1 | Media screening experiment and sACE day-wise activities in different media |
| 2 | To establish the suitability of the HTB in culturing mammalian cells cell line used: Plain CHO cells and CHO cells expressing sACE protein |
| 3 | Sample calculation to determine the biotic mass transfer co-effcient (kLa) with dynamic method |
| 4 | To determine the long term and short-term effect of the impeller speed on the cell health |
| 5 | To detrmine the kLa values for middle to high cell density culture and their operational window |
| 6 | Metabolite analysis-Glucose, lactate, ammonia and osmolality |
| 6 | 1 | 1 | To determine the time-dependent IC50 value of the anti-cancer drug PAN on the Vero cells. |
| 7 |  | 1 | Determination of growth kinetics of CHO cells in DMEM + 1 % FBS through IMC |
|  | 2 | Growth kinetics of CHO cells in DMEM + 1 % FBS through IMC |
|  | 3 | Growth kinetics of CHO-S cells in SFM 4 CHO (serum-free media) through IMC |
|  | 4 | Growth kinetics of Vero (adherent) cells in DMEM + 1% FBS through IMC |
|  | 5 | Growth kinetics of Vero (adherent) cells in SFM 4 MegaVir through IMC |
|  | 6 | Growth kinetics of Vero-S cells suspended in SFM 4 MegaVir (post-treatment withPAN)  |
|  | 7 | Growth kinetics of Vero cells re-grown in DMEM + 10 % FBS (post-treatment with PAN)  |
|  | 8 | Growth kinetics of various cell system (CHO and Vero cells) through IMC  |
|  | Normalization data sheets | Raw data and normalization |