**fitGrowth**

A function for estimating theoretical total cell counts following drug treatment at intermediate time points when measurements are only made at the beginning and end of an assay.

**Data Preparation**

* This function estimates population size over time based on experimentally measured total cell counts from t0 and tend time points from SYTOX measurements.
* Make sure the function ‘fitGrowth.m’ is in the current working directory
* Data can be supplied for multiple drug treatment conditions (e.g. concentrations)
* Replications do not need to be averaged
* Required input data include cell counts at the beginning (t0) and end (tend) of an experiment, drug concentration, assay length (in hours), and time points at which population size estimates are desired.

**fitGrowth structure**

fitGrowth(data,time\_pts)

data – numerical matrix that includes the following information:

column 1: total cell count at t0

column 2: total cell count at tend

column 3: drug concentration (must be numerical)

column 4: experiment length

rows: Each row contains a different replicate and/or drug concentration

time\_pts – single column vector that contains the intermediate time points (in hours) where calculation of theoretical total cell counts is desired

**Running fitGrowth**

* Generate the data and time\_pts variables, as described in fitGrowth structure.
* To run the supplied example data (README-fitGrowth\_Ex.mat):

load README-fitGrowth\_Ex.mat;

* To calculate theoretical cell counts at intermediate time points call the function fitGrowth:

Cell\_counts = fitGrowth(data,time\_pts)

* data is a numerical matrix and time\_pts is a column vector containing the information described above

Table

Description automatically generated

*EXAMPLE of data and time\_pts variables*

* The function will return a data table where each column represents the theoretical cell counts for a given concentration at the time points defined in the variable time\_pts

Chart

Description automatically generated

*Example output from fitGrowth*