REAP-2 User Guide

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# Input data

## Dataset input requirements:

* The input dataset can be in csv, tsv and txt format
* The input dataset contains three columns: Concentration, Effect and Agent
* Columns in the input dataset should follow the order of Concentration, Effect and Agent

## Truncation strategy:

It is recommended that users normalize the response variable to the range of (0,1) by themselves. Otherwise, REAP will automatically truncate the values exceeding the boundaries to (0,1) using a truncation algorithm.

## Example dataset:

The example dataset can be downloaded through the following link:

<https://github.com/vivid225/REAP/blob/main/REAP/31780660_F1B_exampledata.csv>

Here is a screenshot of the dataset:

Table

Description automatically generated

# Parameter selection

## Choosing model feature

1. Log transform dose

The dose-response curve in REAP-2 is based on the median-effect equation. For statistical modeling, the dose-response curve is formulated as:

where and are the intercept and slope parameters that determine a sigmoid dose-response relationship with respect to the effect at the dose level .

By unchecking the *log transform dose* option, the dose-response curve will be re-formulated as:

1. Add potency estimation

The input value of the potency estimation is within (0, 100). By specifying the interested drug potency, REAP-2 will provide point estimation and standard deviation of the potency along with triangle signs specified in the dose-response curve plot (Red box in Fig. 1).

Line chart

Description automatically generated with low confidence

Figure 1 Dose-response curve plot. Triangles in the red box show IC50 values for each dose-response curve.

## Model comparison

## Plot specifics

## Download report