Exponent®

Dose-Response Curve Fitting for Ill-Behaved Data

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Martin Kane

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Disclaimer

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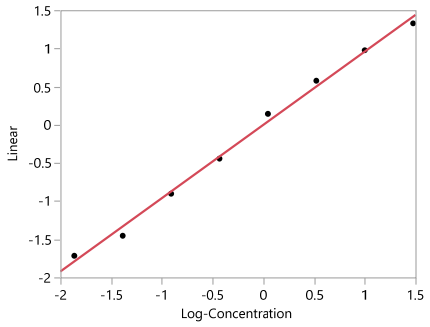
Background

- What are dose-response models?
- What shape do they often follow?
- Typical statistical models
- How to access in JMP?
- Differences between Fit Curve and Nonlinear
  - Benefits of each
- Initial values
- Demonstration
- Ill-behaved data

Dose-Response Models

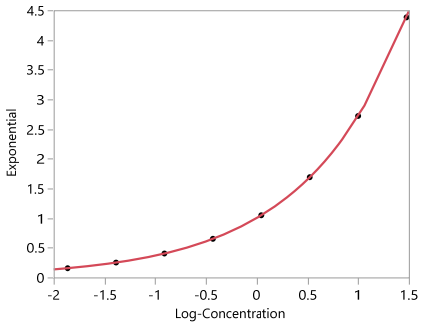
- Linear and Non-linear
- 3, 4, or 5 Parameter Logistic (PL) models are typical
- Shapes

Linear



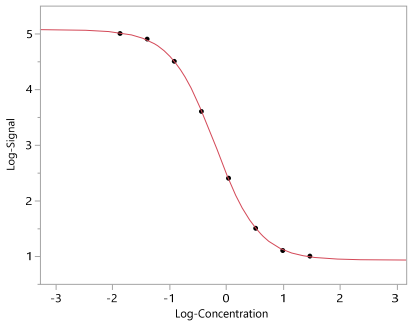
$$y = mx + b$$

Exponential



$$y = e^{x}$$

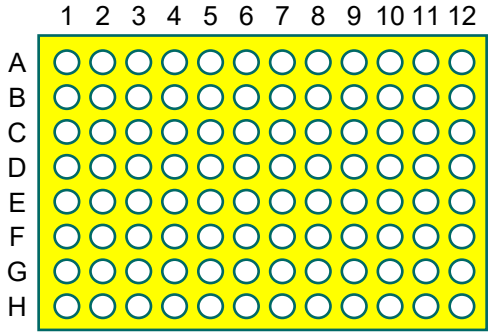
4PL Hill



$$y = c + \frac{(d - c)}{1 + 10^{(a*(b - Log\ Concentration))}}$$

Assay Format

- 96-well or 384-well plates are typically used for assay
  - 12 x 8 well format
  - 7 or 8 concentrations per curve



- Often multiple doses are tested to determine optimum dose
- Parallelism can be tested (JMP can test for this using the F-test or Chi-Square methods)

Launch JMP Journal

- JMP Journal