

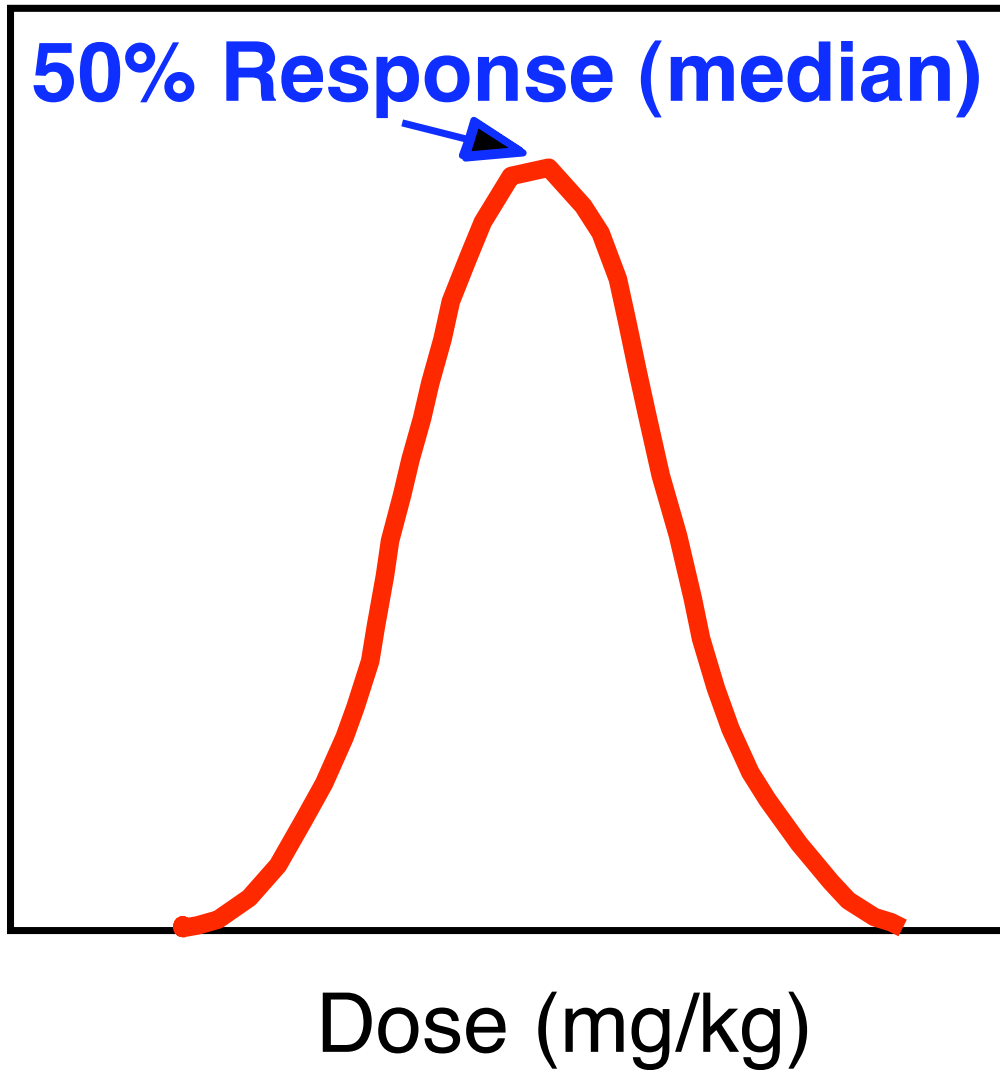
ES/RP 531
Fundamentals of
Environmental Toxicology

Lecture 6

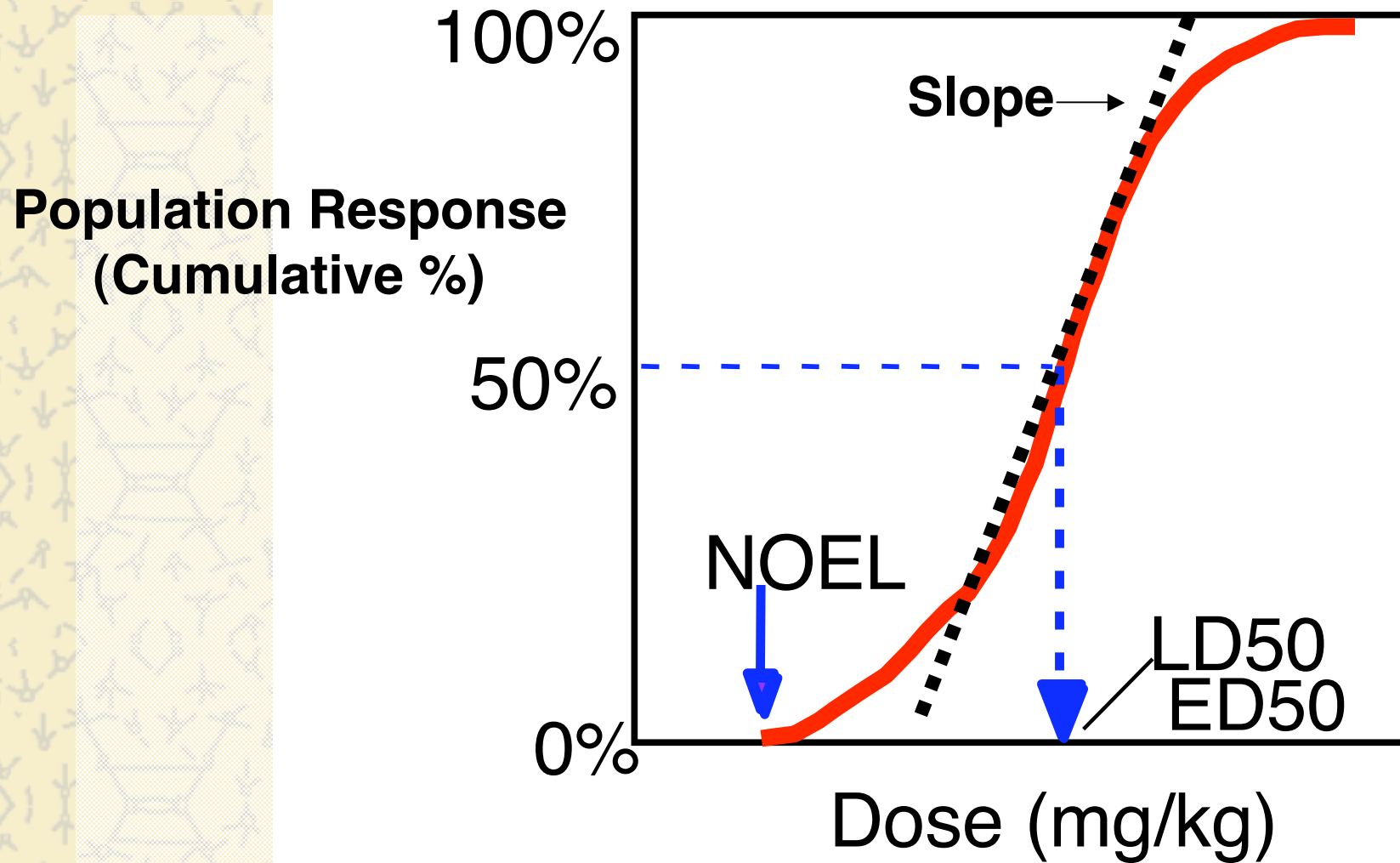
Dose-Response Relationships

Distribution of Individual Responses to Increasing Doses

Numbers
Responding

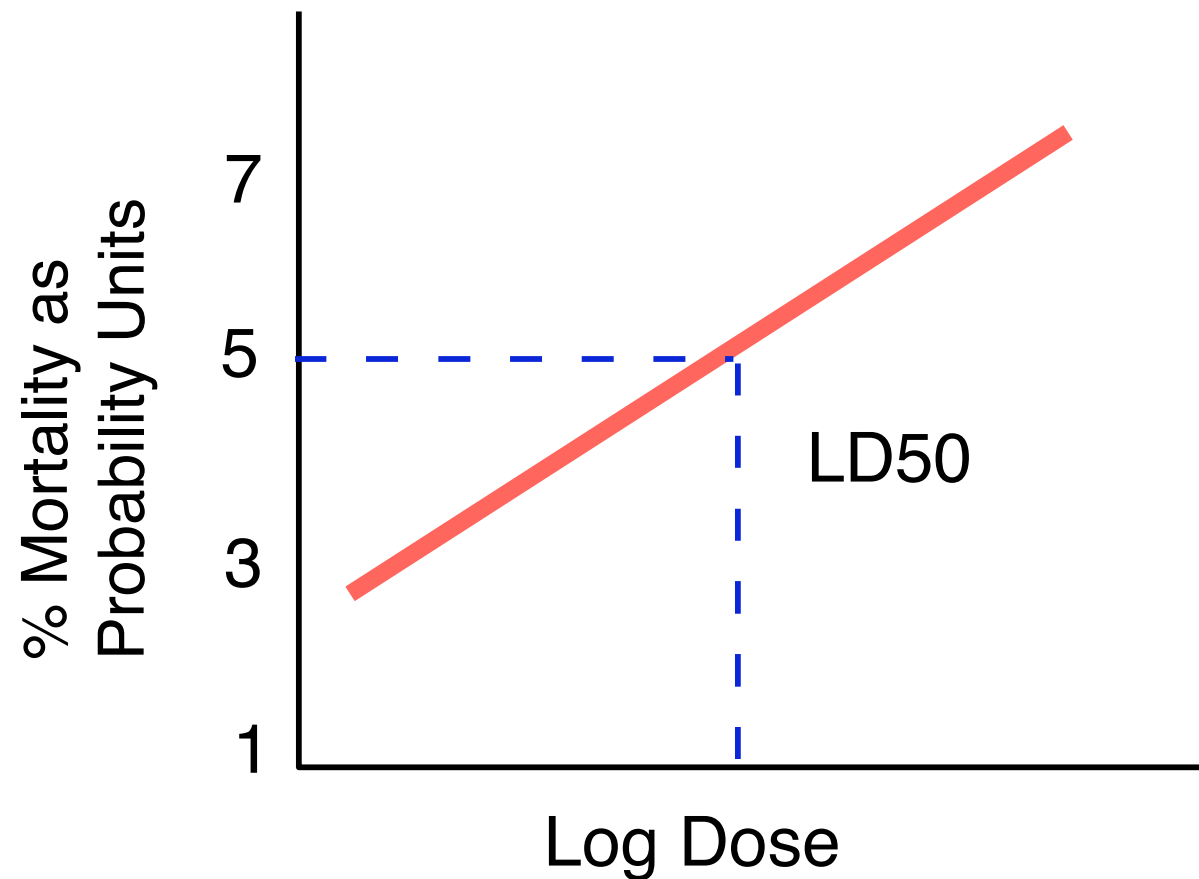


Cumulative Proportion Responding

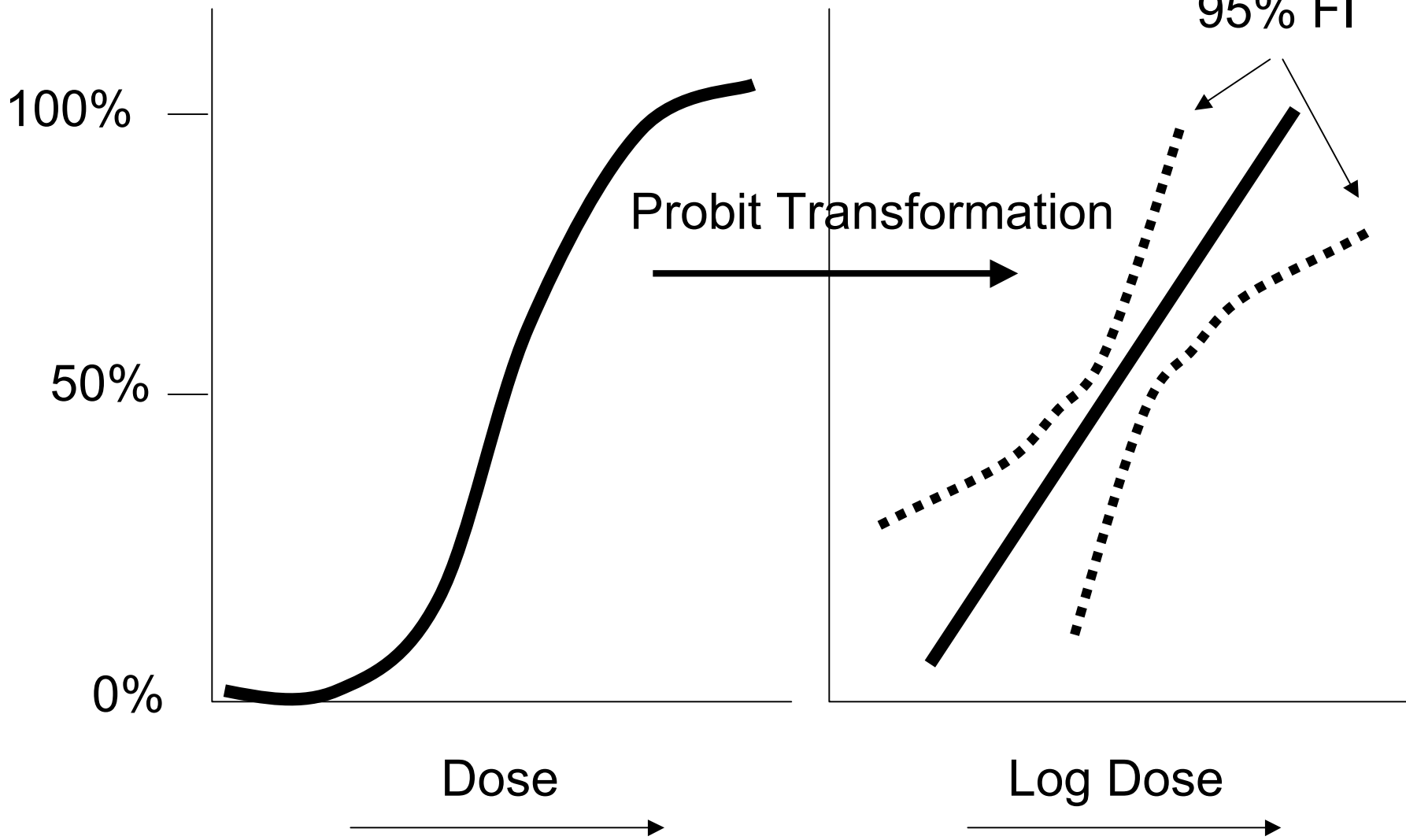


Probit Transformation-Linearization of the Dose-Response Curve

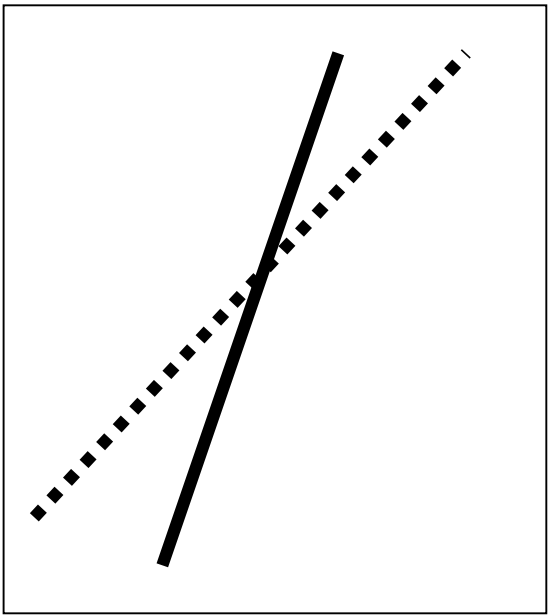
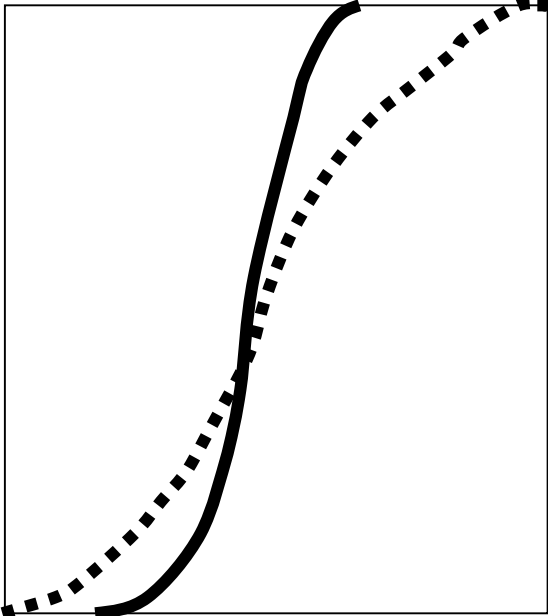
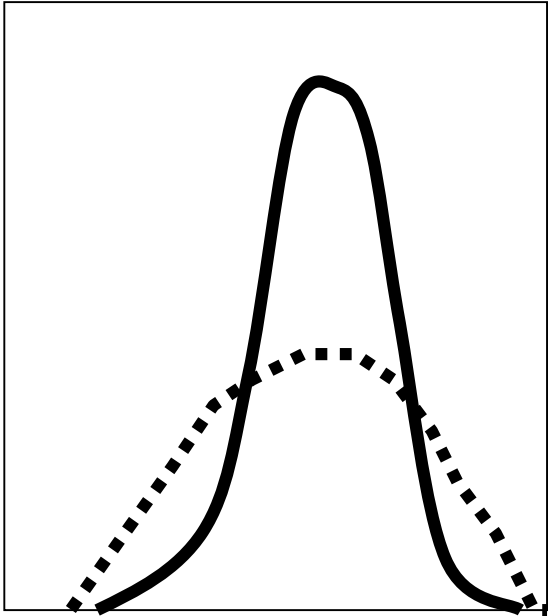
% Mortality	Probit
10	3.72
20	4.16
30	4.48
40	4.75
50	5.00
60	5.25
70	5.52
80	5.84
90	6.28



% Adverse Response

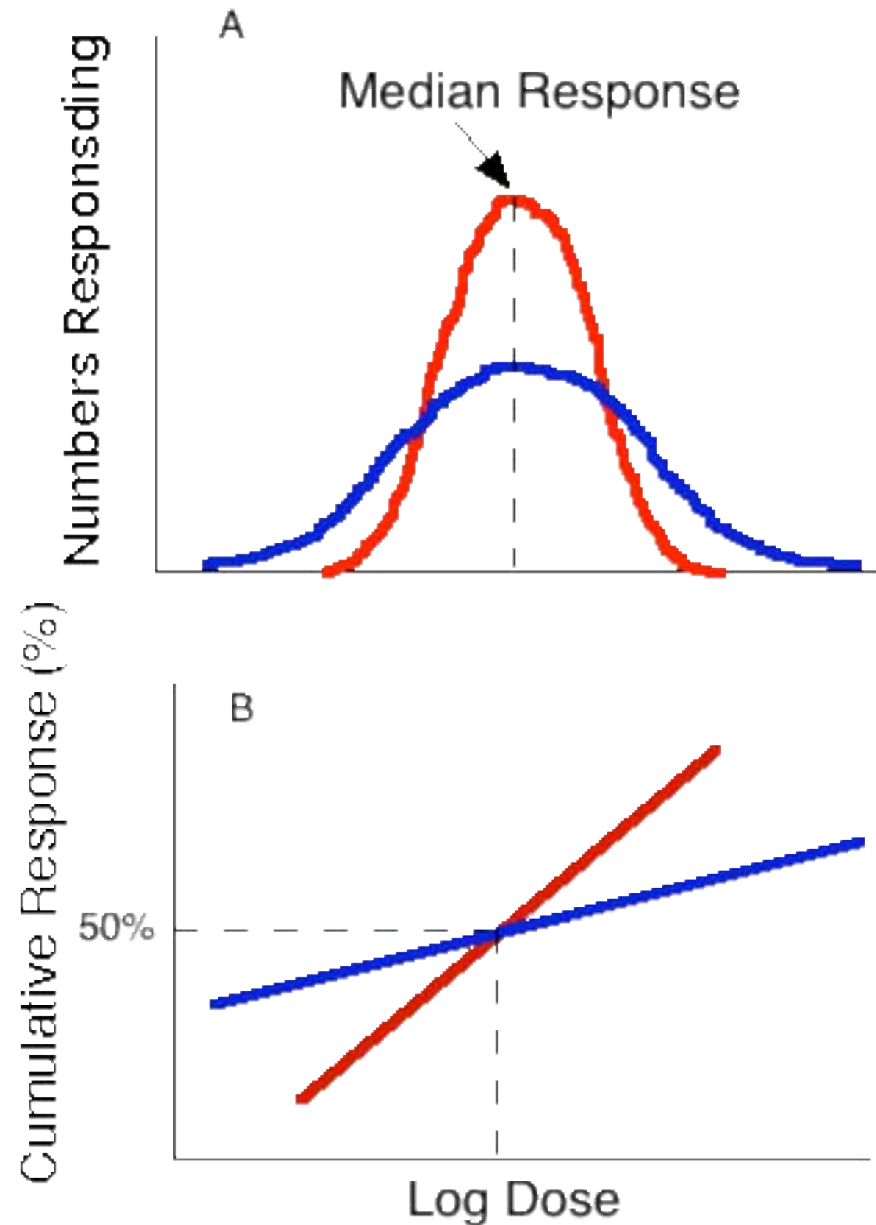


Important Information Contained in the Slope of the Dose-Response Curve



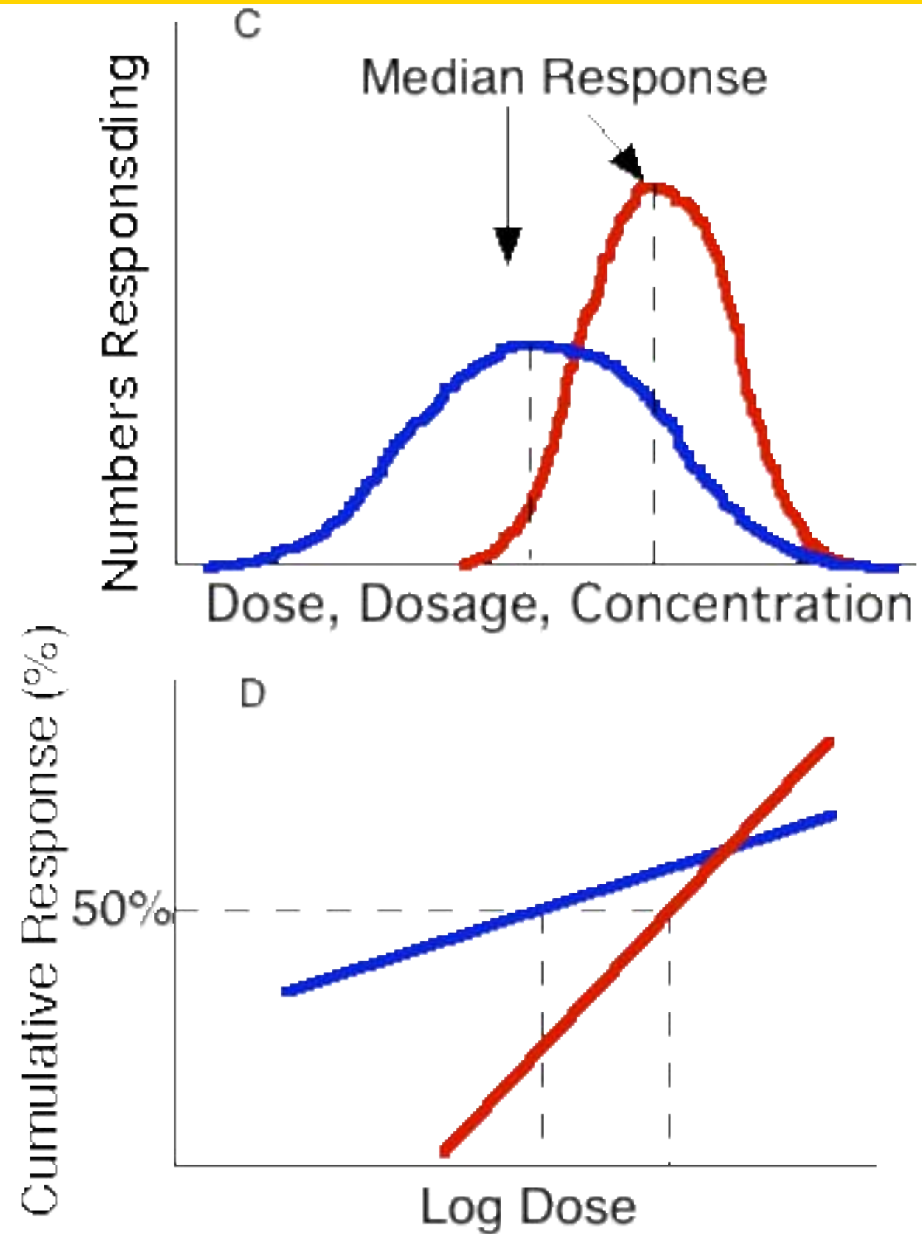
Importance of Slope

- ☛ Represents variability in population response
- ☛ Characterizes margin of safety
- ☛ Response of different species exhibiting same median response to same chemical



Importance of Slope

- 💡 Variation in response of two different species reacting to the same chemical
- 💡 Variation in response of single species reacting to two different chemicals



Monitoring of Resistance Development

