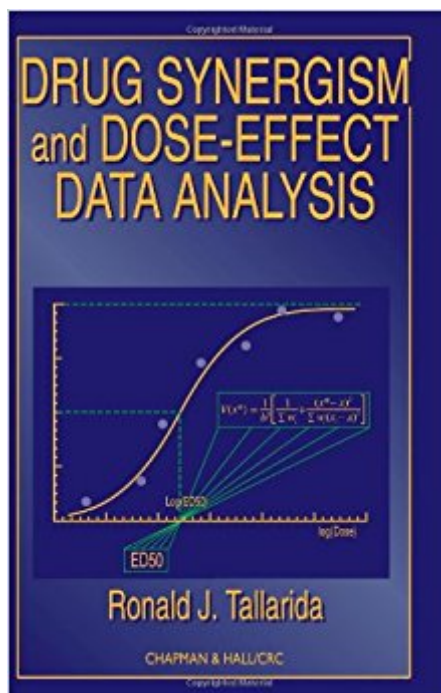


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# Drug Synergism And Dose-Effect Data Analysis



## Synopsis

Not since this author's bestselling *Manual of Pharmacologic Calculation*—long out of print—has there been a reference available for drug data analysis, and even that work did not deal with drug combinations. Although pharmacologists and most other scientists know what synergism is, mainstream textbooks tend to neglect it as a quantitative topic. Few researchers are familiar with the quantitative methodology needed to differentiate synergistic responses from the simply additive responses expected from drug combinations or a single drug's interaction with endogenous chemicals. In *Drug Synergism and Dose-Effect Data Analysis*, noted pharmacologist, mathematician, and author Ronald J. Tallarida finally brings these methods to light. Drawing on statistical theory and methods but keeping the special needs of the pharmacologist in mind, he begins his treatment with dose-response relations, the statistical analysis of the data, and the models that describe them. He also offers the only modern presentation of probit and logit analysis and provides detailed calculation methods not found in typical statistics books. Numerous examples accompany a presentation that clearly illustrates the calculations and experimental design considerations for modern drug analysis. You'll find the conceptual background, the algorithms, and new research developments. In short, *Drug Synergism and Dose-Effect Data Analysis* has everything you need to perform, with confidence, the quantitative analysis of dose response data.

## Book Information

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## Customer Reviews

The statistical analysis of drug combination data in the literature is of a generally poor quality. This

is not through lack of guidance in the literature, but rather because the relevant papers are scattered throughout the statistical and pharmacological literature, making it difficult for researchers to get a good overview of available methodology. What is needed is a single work where the required information is brought together. This book is it! The book covers most of the statistical methods required for drug combination studies, from designing the study to optimise power, fitting dose-response curves, to analysing the data. Many examples are given, which the reader can work through to confirm their understanding. The presentation is very clear, so even those with a limited knowledge of statistics should be able to follow it. The book does not aim to cover all of the available methods for analysing drug combination data, but the methods it does contain will be adequate in most cases. To balance my review I should point out the weak aspects of the book. It is not easy to find any. But maybe some of the material could have been omitted - for example formulas for calculating a linear regression and the variances of the estimates, which most researchers would just want to get from a computer output. Also, there are over 30 pages of tables, such as logarithms, probits, t-tables etc, which most researchers would have access to from other books, and which are rarely required as software normally does all the work. Besides, there is some strange formatting in Table A-2 (natural logarithms). For example,  $\ln(0.1)$  is given as "7.6974-10"; why not just -2.3026? These criticisms are trivial in relation to the positive aspects. Any researcher studying drug combinations for synergistic or antagonistic effects will need this book. I like it.

A very well written walk through of basic knowledge into dose-response data and synergistic relationships. I found it very helpful.

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