

EDITORIAL

Guidelines for Quantitative RT-PCR

Something I notice often in supervising new graduate students is their frustration with the irreproducibility of their biological data. For example, I am asked frequently “how many biological replicates do I need for qRT-PCR”? The answer, of course, lies first with the students themselves. They need as many replicates as will persuade them of the validity of their observations. However, for many—especially younger students who lack experience of the degrees of variability that data can show—such general guidelines are inadequate. In this issue, Ivo Rieu and Stephen Powers attempt to answer such questions and provide guidelines for the experimental design and statistical analysis of qRT-PCR data from the statistician’s perspective. From *The Plant Cell* perspective, these

are **guidelines**; any attempt to impose such analysis as standard while we are still struggling to persuade authors of the deficiencies of “semiquantitative” RT-PCR would be a difficult, if not impossible, task. However, I hope that readers of *The Plant Cell* find this advice useful in designing experiments and analyzing qRT-PCR data. Of course, even where these guidelines are adopted, we will remain heavily dependent on authors to distinguish the data of true biological significance from those of only statistical significance.

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