

Modification of the Data Release Policy for Gene Expression Profiling Experiments

As part of the Editor's Choice series, *Plant Physiology* has published a series of articles on the Sharing of Data and Materials during the past year. To bring this journal's data release policy for gene expression profiling data sets into accord with accepted practices (see Cozzarelli NR [2004] *Proc Natl Acad Sci USA* 101: 3721–3722, and references cited therein; see also Cech TR, Eddy SR, Eisenberg D, Hersey K, Holtzman SH, Poste GH, Raikhel NV, Scheller RH, Singer DB, Waltham MC [2003] *Plant Physiol* 132: 19–24), the Instructions for Authors has been rewritten as given below. In brief, the policy has made explicit the requirement to make gene expression profiling data sets available to the public via permanent, online public repositories. It will no longer be acceptable to provide only a subset of a data set or to provide data sets only at personal Web sites.

In addition, papers based on unreplicated profiling experiments will generally not be accepted for publication. Gene expression profiling experiments should have a statistically sound experimental design (Kerr MK [2003] *Biometrics* 59: 822–828). Data analysis should include statistically based methods and should not rely solely on arbitrary selection methods, such as a 2-fold change in expression level (Page GP, Edwards JW, Barnes S, Weindruch R, Allison DB [2003] *Nutrition* 19: 997–1000).

Beginning January 1, 2005, all new papers with gene expression profiling data will be required to conform to these new guidelines. To meet production deadlines, all manuscripts submitted after August 31, 2004, will be reviewed in light of the new guidelines.

Gene Expression Profiling Data

As a condition of publication in *Plant Physiology*, submitters of manuscripts that contain gene expression profiling data are required to describe the experiments according to MIAME guidelines (Brazma A, Hingamp P, Quackenbush J, Sherlock G, Spellman P, Stoeckert C, Aach J, Ansorge W, Ball CA, Causton HC, Gaasterland T, Glenisson P, Holstege FC, Kim IF, Markowitz V, Matese JC, Parkinson H, Robinson A, Sarkans U, Schulze-Kremer S, Stewart J, Taylor R, Vilo J, Vingron M [2001] *Nat Genet* 29: 365–371; <http://www.mged.org>) and to deposit their entire data set in a public repository with open access. Examples of accepted public gene expression repositories are Gene Expression Omnibus (<http://www.ncbi.nlm.nih.gov/geo>) and ArrayExpress (<http://www.edi.ac.uk/>

arrayexpress). Authors are also strongly encouraged to deposit their data sets in the appropriate community databases (e.g. The Arabidopsis Information Resource [<http://www.arabidopsis.org>] for Arabidopsis gene expression profiling experiments). Accession numbers for the data sets in the public repository must be included in the text. At the initial submission of a paper with expression profiling data, authors must provide the gene expression profiling data set as electronic supplemental data for review purposes.

In general, papers based on unreplicated gene expression profiling experiments will not be accepted for publication in *Plant Physiology*. As with all experiments, gene expression profiling experiments should include replicates of the biological samples being assayed and statistically based methods of data analysis. Supporting experiments, such as real-time PCR for selected genes, are not an adequate substitute for replication within a gene expression profiling experiment. Authors are encouraged to consult a statistician regarding both experimental design and methods of data analysis for their gene expression profiling experiments.

We would like to thank our colleagues who gave us their input and feedback on this policy.

Natasha Raikhel
Editor-in-Chief
Plant Physiology

Shauna Somerville
Monitoring Editor
Plant Physiology