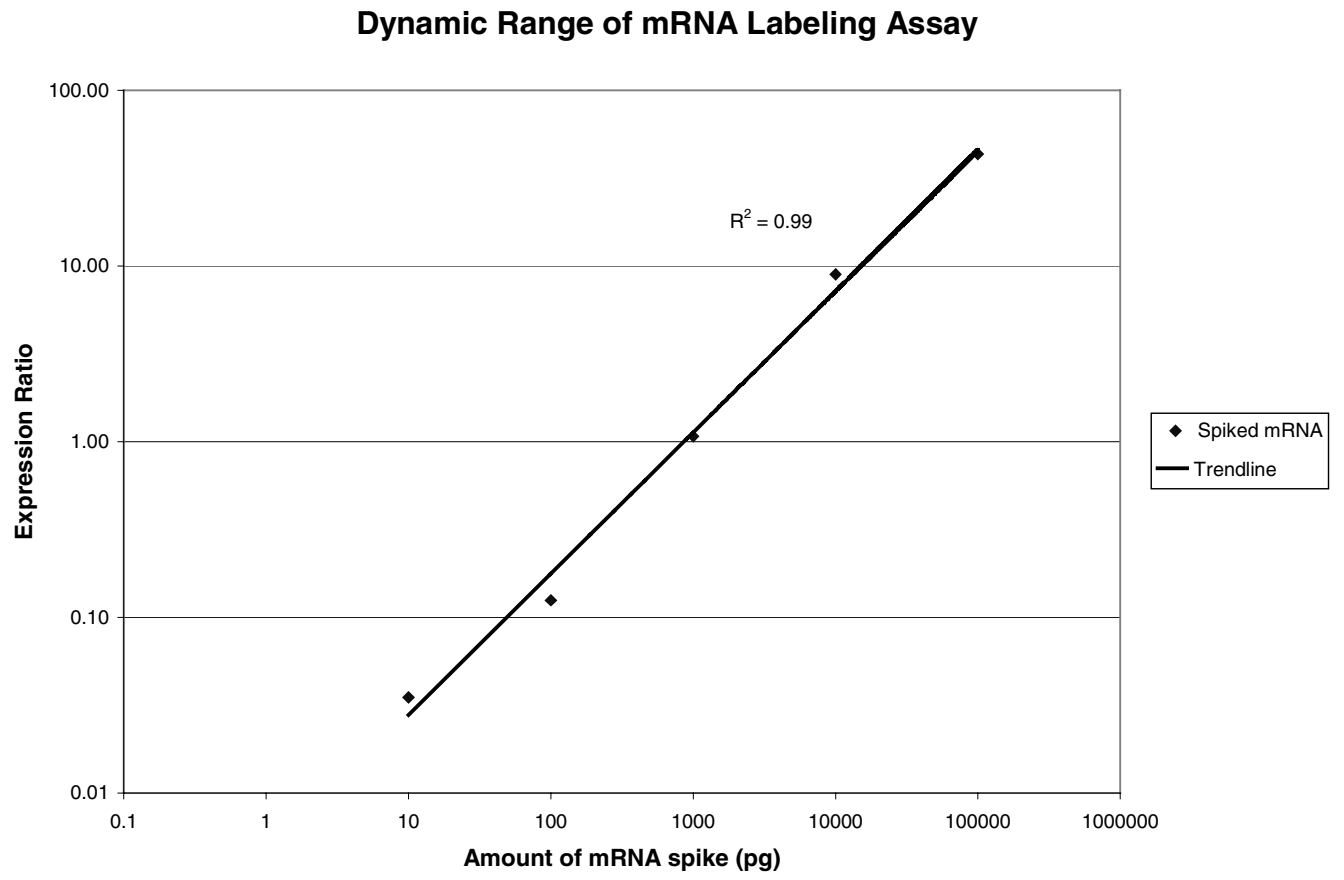


SUPPLEMENTARY MATERIAL

Dynamic range determination

Dynamic range with the novel mRNA labeling technology was determined experimentally using a two-color ratiometric assay. Serial dilutions of a plant control gene were spiked into a 10 μ g sample of total RNA from HL-60 cells and labeled with Cyanine 3. The relative signal intensities from microarray spots from these samples were compared against a constant amount of the same plant control gene spiked into 10 μ g RNA from Jurkat cells labeled using Cyanine 5. The data from these experiments is shown in Figure S1 as the expression ratio of this control gene (Cyanine 3/Cyanine 5) as a function of the amount of control RNA spiked into the test reaction. It indicates that mRNA labeling method is linear over a broad dynamic range ($>10^4$). Each point on the graph depicts an average of eight spots on each microarray slide with an overall correlation coefficient of 0.99.

**Figure S1**

Data from Northern blot analyses

Differential gene expression ratios between two leukemic cells lines (HL-60/Jurkat) were measured by Northern analysis by comparing the autoradiographic signal density of each gene from both cell lines. A standard labeling assay that produced labeled cDNA as well the new mRNA labeling assay were used with MICROMAX™ Human cDNA I screening arrays to produce the ratiometric data shown as a table in Figure S2. The highlighted portion of the table shows that, in the set of genes tested, there is excellent agreement between the ratios determined using either labeling technology with those found using Northern analysis.

Selected Genes	Northern	Labeled mRNA	Labeled cDNA
Precursor Protein	6.7	14	35
MRP-14	3	9	170
Retinal Epithelial	13.5	1.7	10
mRNA TRAMP Protein	1	1.3	2.5
mRNA for Neutrophil Gelatinase	1	1.5	1.6
Gamma-Aminobutyric Acid	2	1.0	1.4
Phospholinase	1	0.7	0.87
Glyceraldehyde-3-Phos Dehydrogenase	0.6	0.45	0.67
Putative GTP-Binding Protein	0.5	0.3	0.3
mRNA for Drebrin E	0.1	0.25	0.4
T-Cell Acute Lymphoblastic Leukemia	0.01	0.06	0.066

Figure S2