


Universal Human Reference RNA (Stratagene)			
Author(s): Holger Sültmann and Ruprecht Kuner			
Created on: 10.12.2003	Version: 1.0	No.: 1.6	Page 1 of 3

Material

Universal Human Reference RNA (Stratagene): Cat Nr: 740000

Shipping information: <http://www.stratagene.com/products/displayProduct.aspx?pid=439>

Producer information

High-quality total RNA for human microarray gene-expression profiling

Acts as a consistent control for standard data set comparisons

Comprised of 10 different cell lines for broad gene coverage on human microarrays

Manufactured at industrial scale lot sizes and stringently quality-controlled for minimized lot-to-lot variation

Stratagene has introduced the Universal Human Reference RNA as a high-quality control for human-based microarray experiments. Comprised as a collection of RNA pooled from ten cell lines for optimal broad gene coverage, the Universal Human Reference RNA provides you with the ability to cross compare data sets from multiple experiments as a single, common control. Our cell lines are grown at industrial scales to produce extremely large lots, which undergo stringent quality-control procedures to address lot-to-lot variability. This guarantees you the confidence that our reference material can be used in multiple experiments carried out over long periods of time.

One of the constraints of using spotted microarrays is that the interpretation of results relies upon measuring relative differences between the levels of expressed genes. This means that the choice of a reference RNA in the analysis is very important. In simple pairwise comparisons, this is easy, as the natural control for a cell line treated with a drug may be simply the cell line left untreated. However, in more elaborate experiments, where one would like to compare many different types of samples, it would be desirable to use a more universal reference. This is especially true when different researchers are attempting to compare their results to each other.

To solve this problem, Stratagene has codeveloped the Universal Human Reference RNA, a standard for accurate and reproducible comparisons of gene expression data. The Universal Reference RNA provides a non-zero signal for many genes, and acts as an internal control between microarray experiments.

The Universal Reference RNA can be used for both simple and complex experiments. Traditionally, each sample is hybridized with and compared to a control sample, for example an untreated cell line. Using the Universal Human Reference RNA, the untreated cell line and each treated cell line are each hybridized with and compared to the Reference RNA. This allows comparisons between experiments and different laboratories to be more meaningful and relevant.

The Universal Human Reference RNA is composed of total RNA isolated from cell lines representing different human tissues. The cell lines were chosen to ensure a broad coverage of human genes on human arrays. The related link below provides a description of the cell lines that make up the Universal Human Reference RNA.

To ensure maximum coverage on human arrays, we evaluated the hybridization of individual cell lines and the combined Reference RNA to our CloneConnection Discovery array. Cell lines were chosen for the reference RNA based on the hybridization profile in order to cover the majority of probe elements on the array to provide coverage for many human genes.

Cell Lines Used to Make Stratagene's Universal Human Reference RNA

Adenocarcinoma, mammary gland

Hepatoblastoma, liver

Adenocarcinoma, cervix

Embryonal carcinoma, testis

Glioblastoma, brain

Melanoma

Liposarcoma

Histiocytic lymphoma; macrophage; histocyte

Lymphoblastic leukemia

Plasmacytoma; myeloma; B lymphocyte

