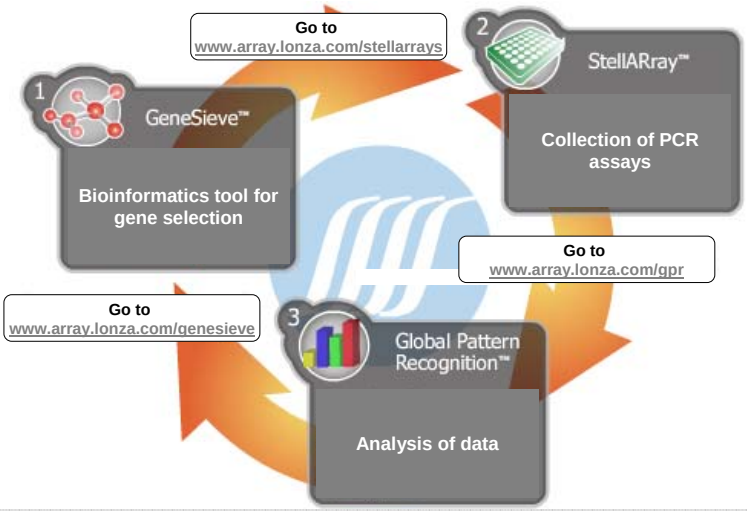
The StellARray™ qPCR Array System: Integrated Solution for Expression Profiling



StellARray™ qPCR Arrays Cover a Broad Range of Research Areas

More than 150 pathway or disease area specific StellARray™ qPCR arrays available off-the-shelf:

- *Allergy*
- *Angiogenesis*
- *Adipositas*
- *Blood disease*
- *Cancer*
- *Cardiovascular disease*
- *CNS disorder*
- *Developmental biology*
- *Immune disorder*
- *Immunology*
- *Infectious disease*
- *Mental disorder*
- *Metabolism*
- *Signal transduction*
- *Stem Cells*
- *Toxicology*
- *Wound healing*

Or contact us for your individual StellARray™ qPCR Array customized with the gene list of your preference

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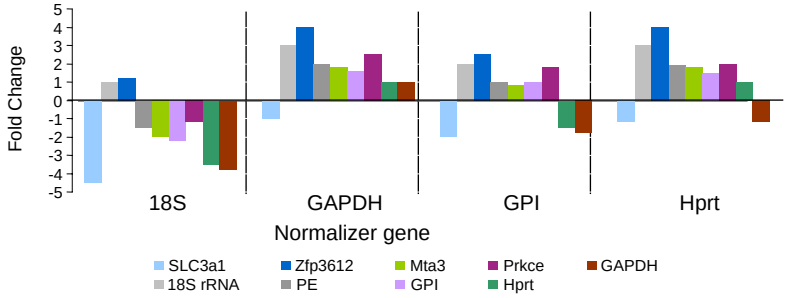
StellARray™ qPCR Array System Solves the Housekeeping Gene Challenge

Conventional ddCT method: Same data set normalized by 4 different normalizers



Which normalizer provides the correct data? Which data would you trust?

GPR™ Statistical Analysis Software eliminates need to investigate for a stable housekeeping gene:

GPR determines invariant genes for normalization in every experiment!

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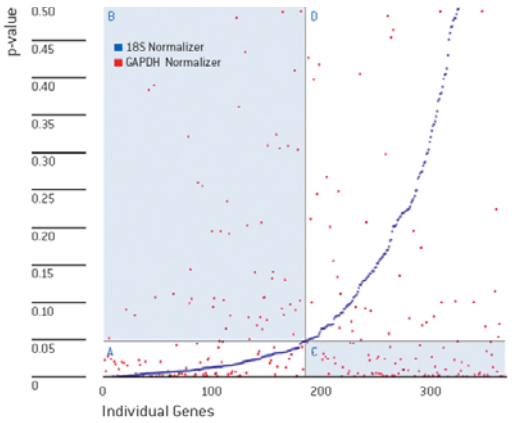
Disparity of Results Produced by Single Gene Normalization

p-value distributions of genes normalized to either 18S or GAPDH



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Broad Compatibility with Most Common Real-Time Devices

Product type	For Real-Time Instruments
96-well Plate	Most thermal cyclers (non-ABI®, non-Roche®, non-low profile), such as Eppendorf®, Bio-Rad®, iCycler®, iQ5®, myiQ® Stratagene™, MX3000P® and MX3005P®
FAST 96-well Plate	ABI® FAST 96-well blocks
AB 96-well Plate	All ABI® "standard" blocks (7000, 7300, 7500, 7700, 7900)
384-well Plate	All common 384-well thermal cyclers, such as ABI®, Eppendorf®, Bio-Rad®

- For Roche® LightCycler® 480 with 96-well block or a device requiring a low-profile plate such as the Bio-Rad® CFX96® or Stratagene™ MX4000®, please contact us to inquire compatible plate format

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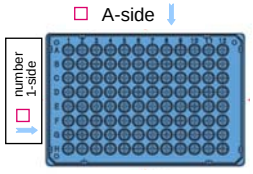
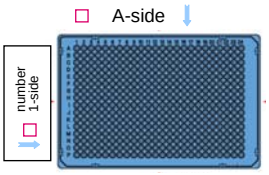
StellARray™ qPCR Arrays – What they are –

- Collection of PCR assays, gathered by biological pathway relevance
- Same product can be used for expression profiling as well as analysis of gene copy number
- Contain strategically designed primers optimized and "wet-lab" tested
  - Organism specificity, gene specificity, Amplicon efficiency, uniform primer Tms, Absence of primer-dimers etc
- Custom plate manufacture option
- Compatible with many SYBR mastermixes and thermocyclers

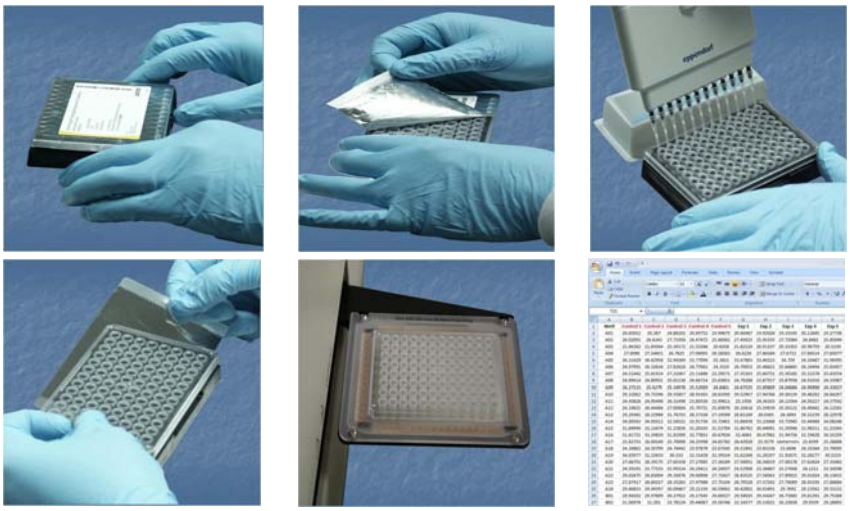
96-well format



384-well format



StellARray™ qPCR Arrays
– Procedure –



Features & Benefits at a Glance

Reliable normalization without predefined normalizers - StellARray™ proprietary GPR Software automatically determines and applies the best normalizer genes based on lowest variance

More than 150 pre-validated pathway or disease area specific qPCR Arrays available off-the shelf - Just order and start comprehensive array experiments for your research area using your standard qPCR equipment

Copy number analysis and expression profiling using the same array plate - Compare gene copy numbers and gene expression profiles for exactly the same sets of genes

Array results ranked by significance - Don't miss small but biological significant fold changes

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Outline

- Fundamental challenges in gene expression research
- Product Components
- Application Examples
- Features & Benefits

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Application Data

- Toxicology
  - We evaluated the expression profile of the effect of exposure to Acetaminophen (APAP) on Fresh Primary Human Hepatocytes (Lonza). This classic gene expression profiling example involves the demonstration of Acetaminophen-derived hepatotoxic effects.
  - HS General Tox 384 StellARray™ (Lonza Cat. # 00188331)
- Cancer
  - A Lymphoma is a type of solid neoplasm that originates from lymphocytes. We analyzed a tumor (large B-cell type lymphoma, which arose in the small intestine) and matched normal sample from a single individual.
  - HS Lymphoma & Leukemia 384 StellARray™ (Lonza Cat. # 00188333)

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Application Data

- Stem Cell Differentiation
  - Mesenchymal stem cells, derived from the bone marrow, can give rise to stromal cells, fat cells, and types of bone cells. In this application, differentiation conditions were selected to drive the hMSC cells to an osteogenic phenotype.
  - HS Stem Cell 384 StellARray™ (Lonza Cat. # 00188335)
- Copy Number Variation
  - Individual gDNA samples from five male C57BL/6J and five female C57BL/6J mice were compared for a GPR-based genomic DNA copy number variation (gDNA CNV) analysis.
  - Lymphoma and Leukemia 384 StellARray™

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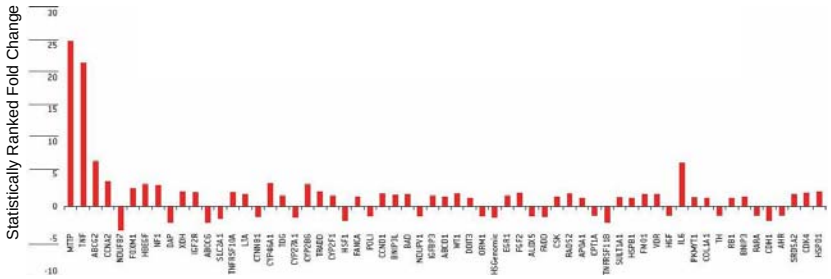
Effect of Exposure to Acetaminophen on Lonza Fresh Primary Human Hepatocytes

GPR analysis yielded 61 significantly changing genes ('hitters') from 383 potential targets.



Human General Toxicology 384 StellARay™ qPCR Array & Acetaminophen-treated Ready Heps™. Primary Human Hepatocytes

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Expression Profile of a Lymphoma Tumor and a Matched Normal Sample

GPR analysis yielded 75 significantly changing genes (‘hitters’) from 383 potential targets.

Human Lymphoma & Leukemia 384StellARay™ qPCR Array & FirstChoice® Human Tumor RNA sample is derived from a large B cell type lymphoma

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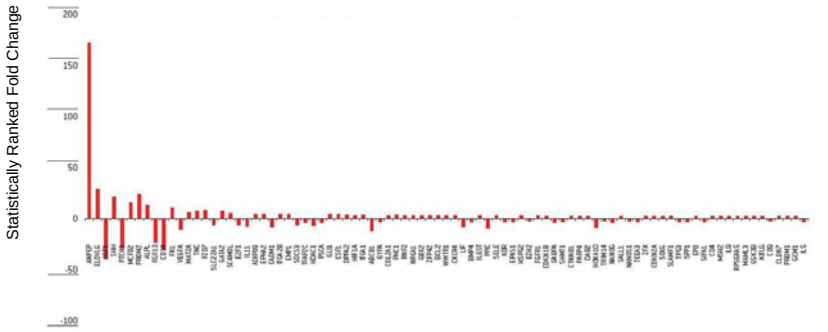
Expression Profile of hMSC Cells Differentiated into an Osteogenic Phenotype

GPR analysis yielded 87 significantly changing genes (‘hitters’) from 383 potential targets



Human Stem Cell 384StellARay™ qPCR Array & Poietics® hMSC Human Mesenchymal Stem Cells, derived from the bone marrow.