

## SureSilencing™ siRNA Arrays

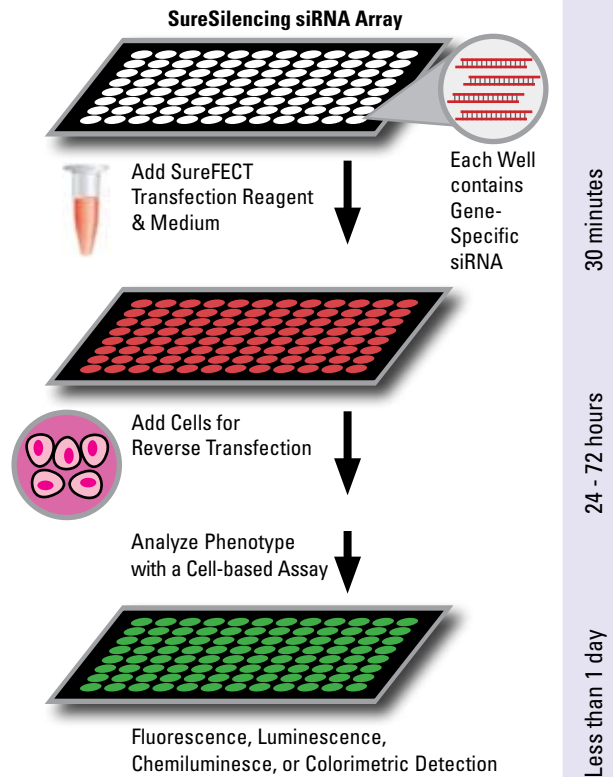
### Simultaneously Analyze the Function of 42 Genes in Your Pathway

The SureSilencing siRNA Array is the latest technological innovation for conducting functional studies on your pathway of interest through RNA interference (RNAi). Validated siRNA (2 sequences per gene) for 42 key pathway-focused genes with appropriate RNAi controls are arrayed on a 96-well plate. Following reverse transfection of the siRNA, you can directly determine the phenotype of the cells on the same plate with colorimetric, luminescent or fluorescent cell-based assays. Using the SureSilencing siRNA Arrays, you can quickly identify genes involved in a biological process or disease state, the targets of chemical compounds, and the biological impact of your genes of interest in a pathway.

#### Benefits of the siRNA Arrays

- **Pathway Focused:**  
Knock down 42 key genes situated in the same biological pathway
- **Reliable and Proven:**  
Validated to deliver > 70% knockdown performance\*
- **Ease-of-Use & High-Performance:**  
Simple protocol, convenient plate design, high transfection efficiency  
Pathway functional studies accessible to everyone

#### How It Works

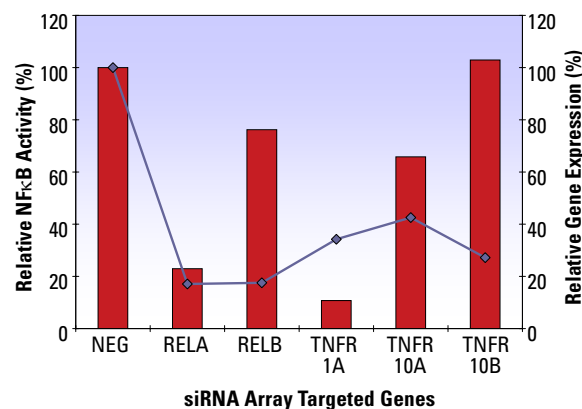


**Figure 1:** Reverse transfection produces equivalent or improved transfection efficiencies over standard pre-plated methods\*\* and saves an entire day in the process. The simplicity and reliability of the siRNA Array allow you to quickly analyze gene function in your pathways of interest.

#### Application Example: NFκB

##### Accurate Pathway Analysis

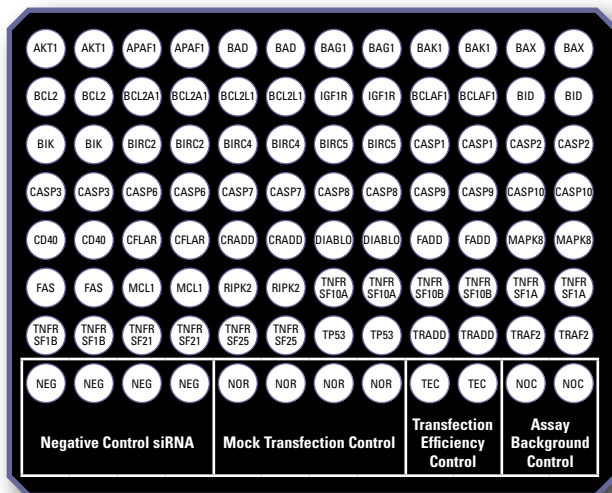
TNF Receptor 1A and RELA are Required for TNF $\alpha$  Activation of NFκB Signaling



**Figure 2:** TNF Receptor 1A and RELA are Required for TNF $\alpha$  Activation of NFκB Signaling. HEK-293H cells, containing the Signal™ NFκB Pathway Reporter Assay, were reverse transfected in the Human NFκB Signaling Pathway siRNA Array for 48 h. After treatment with 50 ng/ml TNF $\alpha$  for 5 h, relative NFκB activity was analyzed by luminescence (red bars), and gene knockdown was also determined by real-time RT-PCR (blue symbols).

RELA knockdown abolishes the NFκB reporter activity seen upon TNF $\alpha$  stimulation, whereas RELB knockdown has a much reduced effect. Only knockdown of TNF receptor 1A, and not 10A or 10B, significantly inhibits TNF $\alpha$  stimulation of reporter activity. Therefore, RELA but not RELB, and TNF Receptor 1A but not 10A or 10B mediate TNF $\alpha$ -dependent NFκB signaling.

## Layout of an siRNA Array



**Figure 3:** Each siRNA Array contains duplicate wells of siRNA pairs for 42 pathway-focused genes, and four replicate controls: negative control siRNA (NEG), mock transfection (NOR), transfection efficiency (TEC), and assay background (NOC). The gene list for the Human Apoptosis siRNA Array is shown.

SureSilencing siRNA Arrays are designed to study gene function with cell-based assay such as:

1. Fluorescence assays for cell viability
2. Chemiluminescence assays for enzyme activity
3. Luciferase reporter assays for pathway activation
4. Colorimetric assays for protein phosphorylation
5. Microscopy for morphology & immunostaining

## Performance

### Minimizing Off-Target Effects

Our stringent computer algorithm minimizes off-target effects by using a sophisticated sequence alignment filter to design gene-specific siRNA.

### Guarantying Gene Knockdown

Each siRNA pair is validated experimentally on the bench by a well-controlled, rigorous real-time RT-PCR assay insuring greater than 70 percent knock down at the RNA level and thereby minimizing false negatives.

## Applications

### Accurate Pathway Analysis

Systematically analyze a biological pathway to identify genes relevant to your research

### Functional Analysis of Novel Genes

Determine genetic and functional relationships of novel genes of interest to a biological pathway

### Drug Target, Enhancer, or Inhibitor Validation

Validate drug targets and identify enhancers or inhibitors of a drug's activity

## SureSilencing™ siRNA Arrays Ordering Guide

Pathway	Pack Size	Catalog Number
Human Apoptosis	2 Arrays	SAH-012A-2
	12 Arrays	SAH-012A-12
Human NFκB Signaling	2 Arrays	SAH-025A-2
	12 Arrays	SAH-025A-12
Human Transcription Factor	2 Arrays	SAH-075A-2
	12 Arrays	SAH-075A-12

### Accessory Products:

Product	Pack Size	Catalog Number
SureFECT™ Transfection Reagent	0.5 mL (enough for 12 siRNA Arrays)	SA-01

\* The SureSilencing siRNA Arrays are guaranteed to knock down expression of the targeted genes at the RNA level by at least 70 percent as measured by real-time qRT-PCR under conditions of consistently high transfection efficiencies.

\*\* Ziauddin J, Sabatini DM (2001) Microarrays of cells expressing defined cDNAs. Nature 411:107-110.

## Focus on your Pathway