

## miProfile™ Human Toxicology Related miRNA qPCR Array

For focused group profiling of human toxicology related miRNA expression

Cat. No. QM036-A (1 x 96-well plate, Format A)

Cat. No. QM036-B (1 x 96-well plate, Format B)

Cat. No. QM036-C (1 x 96-well plate, Format C)

Cat. No. QM036-D (1 x 96-well plate, Format D)

Cat. No. QM036-E (1 x 96-well plate, Format E)

Available as 1 set or 6 sets. Each set contains 84 unique miRNA primers deposited in one 96-well plate.

### Introduction

The miProfile human toxicology related miRNA qPCR array profiles 84 miRNAs that are associated with toxicology. When an organism is exposed to a toxic compound, cells respond by altering the pattern of gene expression, including miRNAs. Altered miRNA expression affects protein translation, which in turn alters cellular physiology causing adverse biological effects. Moreover, different types of cellular stress have been shown to affect miRNA expression as a mechanism of adaptation or tolerance to stress factors in order to survive. Besides an updated theoretical background concerning miRNAs biology, biogenesis, function, and roles in disease, study miRNAs response to exogenous agents such as environmental stressors and toxic compounds may explore new avenues of research of miRNAs.

- QM036 plate 01: 84 unique miRNA PCR primer pairs

### Shipping and storage condition

Shipped at room temperature

Stable for at least 6 months when stored at -20°C

### Array format

GeneCopeia provides five qPCR array formats (A, B, C, D, and E) suitable for use with the following real-time cyclers.

**Important note:** Upon receiving, please check to make sure that the correct array format was ordered to ensure the compatibility with your qPCR instrument.

Plate format	Instrument provider	qPCR instrument model
<b>A</b> (96-well)	Applied Biosystems	5700, 7000, 7300, 7500, 7700, 7900HT (Standard 96-well block), ViiA™7 (Standard 96-well block)
<b>B</b> (96-well)	Applied Biosystems	7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA™7 (Fast block)
<b>C</b> (96-well)	Bio-Rad Laboratories	iCycler iQ®, MyiQ™, iQ™5
<b>D</b> (96-well)	Bio-Rad Laboratories	CFX96™, DNA Engine Opticon™, DNA Engine Opticon 2™, Chromo4™
<b>E</b> (96-well)	Roche Applied Science	LightCycler® 480 (96-well block)

**Quality control**

1. Each miRNA-specific primer in the miProfile miRNA qPCR array has been experimentally validated to yield a single dissociation curve peak and to generate a single amplicon of the correct size for the targeted miRNA.
2. The positive PCR controls (PCR) have been verified to amplify a single amplicon of the correct size with Ct values around **20±2**.
3. The Spike-in reverse transcription controls (RT) have been verified to amplify a single amplicon of the correct size with Ct values around **20±3**.
4.  $R_2 > 0.99$  was observed for high inter/ intra-array reproducibility.

**Materials required but not provided**

All-in-One™ miRNA First-Strand cDNA Synthesis Kit  
 All-in-One™ qPCR Mix  
 Total RNA extraction kit (RNAzol® RT RNA extraction reagent is recommended)  
 DNase/RNase free tips, PCR reaction tubes, 1.5 ml microcentrifuge tubes  
 5 ml and 10 ml graduated pipettes, beakers, flasks, and cylinders  
 10 µl to 1,000 µl adjustable single channel micropipettes with disposable tips  
 5 µl to 20 µl adjustable multichannel micropipette, disposable tips, and reservoir  
 qPCR instrument, compatible with gene qPCR arrays ordered

**Array layout**

	1	2	3	4	5	6	7	8	9	10	11	12
A	1	2	3	4	5	6	7	8	9	10	11	12
B	13	14	15	16	17	18	19	20	21	22	23	24
C	25	26	27	28	29	30	31	32	33	34	35	36
D	37	38	39	40	41	42	43	44	45	46	47	48
E	49	50	51	52	53	54	55	56	57	58	59	60
F	61	62	63	64	65	66	67	68	69	70	71	72
G	73	74	75	76	77	78	79	80	81	82	83	84
H	NC	NC	HK1	HK2	HK3	HK4	HK5	HK6	RT	RT	PCR	PCR

Figure1. Illustration of miProfile miRNA qPCR array (96-well plate)

- **miRNA primer pairs:** Wells 1-84 are designated wells for pre-deposited miRNA primer pairs.
- **NC:** Negative controls, which only have the pre-deposited reverse universal primers.
- **HK1-6:** Six pre-deposited housekeeping snRNAs primer pairs, which can be used as endogenous positive controls as well as for array normalization.
- **RT:** Three replicates of spike-in reverse transcription controls, which can be used to monitor the efficiency of the RT reaction. These pre-deposited primer pairs specifically amplify the cDNA template reverse transcribed from the spike-in exogenous RNA in the sample.
- **PCR:** Three replicates of positive PCR controls, which are used to verify the PCR efficiency by amplifying the pre-deposited DNA template with its specific pre-deposited primer pairs.

**miRNA primer list**

The primer list can be downloaded from <http://www.genecopoeia.com/product/qpcr-arrays/mirna/disease.php>.

### Limited Use License

Following terms and conditions apply to use of miProfile™ Human Toxicology Related miRNA qPCR Array (the Product). If the terms and conditions are not acceptable, the Product in its entirety must be returned to GeneCopoeia within 5 calendar days. A limited End-User license is granted to the purchaser of the Product. The Product shall be used by the purchaser for internal research purposes only. The Product is expressly not designed, intended, or warranted for use in humans or for therapeutic or diagnostic use. The Product must not be resold, repackaged or modified for resale, or used to manufacture commercial products or deliver information obtained in service without prior written consent from GeneCopoeia. This Product should be used in accordance with the NIH guidelines developed for recombinant DNA and genetic research. Use of any part of the Product constitutes acceptance of the above terms.

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