Cignal Reporter Assays

For cell-based analysis of pathway signaling activity

Cignal Reporter Assays monitor cell signaling pathway activity. Cignal Reporter Assays provide a rapid, sensitive, and quantitative assessment of signal transduction pathway activation by measuring the activities of downstream transcription factors, using either dual-luciferase or green fluorescent protein (GFP) reporter systems. Every reporter assay is individually engineered to exhibit outstanding sensitivity, specificity, and signal-to-noise ratio. Cignal Reporter Assays are available as single pathway assays or as multi-pathway arrays, allowing you to monitor an individual pathway (Figure 1) or obtain a comprehensive view of multiple pathways involved in a biological process. These reporter assays are valuable tools for understanding gene function, as well as determining the mechanisms of action of proteins, peptides, and small molecule compounds.

Cignal Reporter Assays provide:

- Transfection-ready constructs, including positive and negative controls
- Functionally verified reporter assays for 45 signaling pathways
- Exceptional sensitivity, specificity, and signal-to-noise ratio

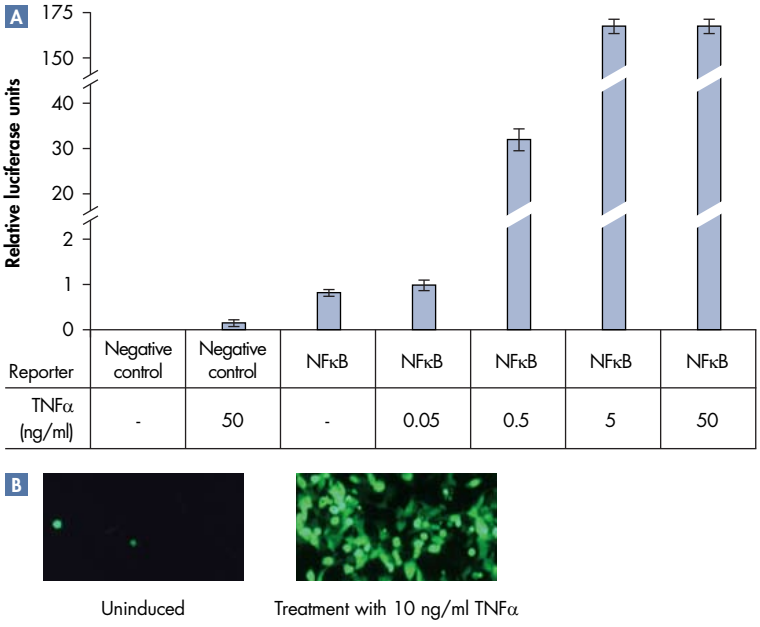

Figure 1. Cignal Reporter Assays quantitate inflammatory signaling in response to cytokines. HEK-293 cells were transiently transfected with the NFκB Cignal Reporter Assay A or the NFκB-GFP Cignal Reporter Assay B. A After 24 hours of transfection, cells were treated with increasing doses of recombinant TNF-α for 24 hours, then lysed and assessed for luciferase activity. Relative luciferase activity is shown as the mean (+- S.D.) of 3 independent experiments. B After 16 hours of transfection, medium was replaced with assay medium. After 24 hours of transfection, cells were treated with 10 ng/ml hTNF. After 18 hours of treatment, fluorescent images of the cultured cells were acquired.

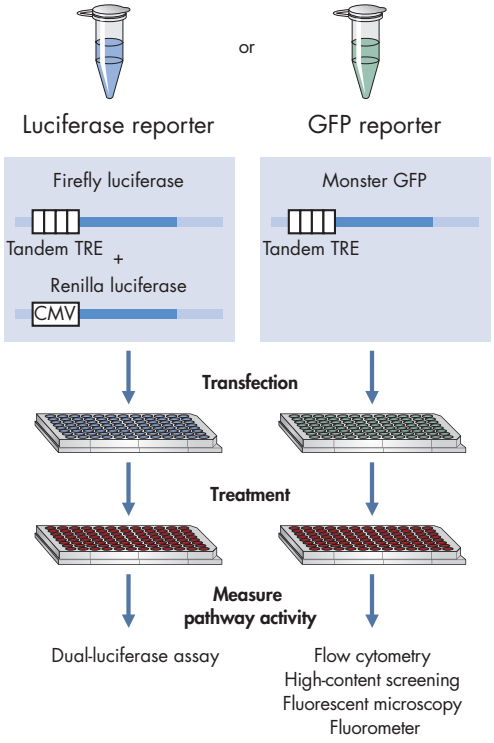

Figure 2. Cignal Reporter Assay workflow. Cignal Reporter Assays include pre-formulated, transfection-ready reporter, negative control, and positive control. The transcription factor reporter and negative control are transfected and subjected to experimental treatments in parallel. Dual-luciferase results are calculated for each transfectant, or GFP expression is quantitated using a flow cytometer, fluorescent microscope, or fluorometer. The change in the activity of each signaling pathway is determined by comparing the normalized luciferase activities or the GFP activities in treated versus untreated transfectants. The identically treated negative control transfectants serve as a specificity control, and the positive control serves as a control for transfection efficiency.

QIAGEN®

Cignal Reporter Assays

Pathway	Transcription factor	DNA-based		Lentiviral	
Amino Acid Deprivation	ATF4/3/2	■		■	
Androgen	AR	■		■	
Antioxidant Response	NRF2/1	■	■	■	
ATF6	ATF6	■		■	
C/EBP	C/EBP	■	■	■	
cAMP/PKA	CREB	■	■	■	■
Cell Cycle	E2F/DP1	■		■	
DNA Damage	P53	■			
EGR1	EGR1	■	■	■	
ER Stress	CBF/NF-Y/YY1	■		■	
Estrogen	ER	■			
GATA	GATA	■			
Glucocorticoid	GR	■			
Heat Shock Response	HSF	■			
Heavy Metal Stress	MTF1	■	■	■	
Hedgehog	GLI	■		■	
HNF4	HNF4	■			
Hypoxia	HIF-1α	■		■	
Interferon Regulatory Factor	IRF1	■		■	
Interferon Type I	STAT1/STAT2	■	■	■	
Interferon Gamma	STAT1/STAT1	■		■	
KLF4	KLF4	■	■	■	
Liver X Receptor	LXR	■		■	
MAPK/ERK	ELK-1/SRF	■	■	■	■
MAPK/JNK	AP-1	■	■	■	■
MEF2	MEF2	■		■	

Pathway	Transcription factor	DNA-based		Lentiviral	
Myc	MYC/MAX	■		■	
Nanog	NANOG	■		■	
NFκB	NFκB	■	■	■	■
Notch	RBP-Jκ	■	■	■	■
Oct4	OCT4	■		■	
Pax6	PAX6	■			
PI3K/AKT	FOXO	■	■	■	
PKC/Ca^{++}	NFAT	■		■	
PPAR	PPAR	■			
Progesterone	PR	■			
Retinoic Acid	RAR	■		■	
Retinoid X	RXR	■		■	
Sox2	SOX2	■			
SP1	SP1	■	■	■	
STAT3	STAT3	■		■	
TGFβ	SMAD2/3/4	■	■	■	
Vitamin D	VDR	■		■	
Wnt	TCF/LEF	■	■	■	■
Xenobiotic	AhR	■	■	■	
Positive Control		■	■	■	■
Negative Control		■	■	■	■
Renilla Control				■	

■ DNA-based luciferase ■ Lentiviral luciferase
■ DNA-based GFP ■ Lentiviral GFP

Ordering Information

Product	Contents	Cat. no.
Cignal Reporter Assays	DNA-based reporters with firefly luciferase or GFP	336841
Cignal Lenti Reporter Assays	1 or 8 tubes with inducible firefly luciferase or GFP reporter	336851
Cignal Reporter Controls	Positive or negative controls with GFP or luciferase	336881
Cignal Lenti Reporter Controls	Positive or negative controls with GFP, RFP, or luciferase	336891

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