

Cignal Lenti Reporter Assays

For measurement of signaling pathways in any mammalian cell

Cignal Lenti Reporter Assays are ready-to-transduce lentiviral particles that enable the measurement of a signaling pathway in any mammalian cell. Pathway-specific reporters utilize experimentally verified transcription factor response elements upstream of either a luminescent or fluorescent reporter gene.

Reporters for a variety of applications

The Cignal Lenti Reporter system utilizes a unique combination of transcription factor reporter technology coupled with lentiviral delivery power. These reporters are powerful tools in functional genomics and drug discovery for assessing pathway activity. When a pathway is activated or inhibited by a drug candidate, gene knockdown (using siRNA), overexpression event (expression vectors), or peptide, luciferase or GFP reporter activity is modulated and can be measured quantitatively and rapidly. The Cignal Lenti Reporters are specifically designed to be safe for use in your laboratory.

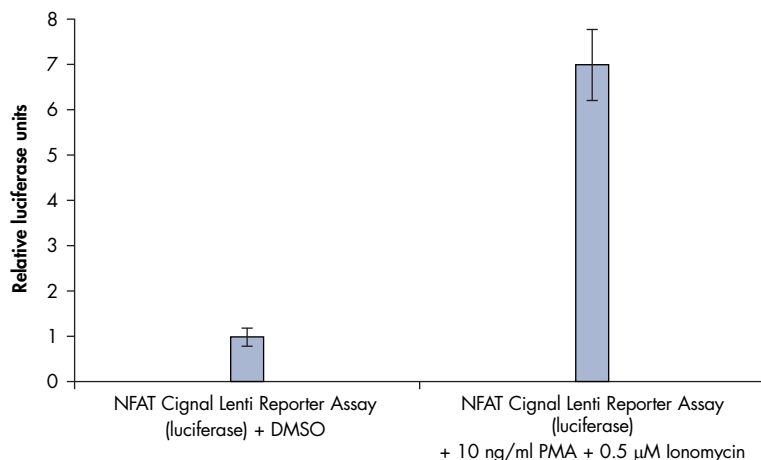


Figure 1. NFAT Cignal Lenti Reporter Assay measured PKA/Ca²⁺ pathway activity in human primary cells [Normal Human Pulmonary Artery Smooth Muscle Cells, (PASMOC)]. NFAT Cignal Lenti Reporter Assay (4×10^5 TU) and Cignal Lenti Renilla Control (1×10^5 TU) co-transduced approximately 10,000 PASMOC cells. The Renilla luciferase control was used as a normalization control. After 48 hours of transduction, medium was changed to assay medium. After 54 hours of transduction, cells were treated with 10 ng/ml PMA and 0.5 μM ionomycin for 18 hours. Cells were lysed and assayed for luciferase activity. Relative luciferase activity is shown as the mean (\pm S.D.) of 3 independent experiments.

Cignal Lenti Reporter Assays provide:

- Ready-to-use titered lentivirus
- Measurement of signaling in any cell type
- Generation of stable cell lines

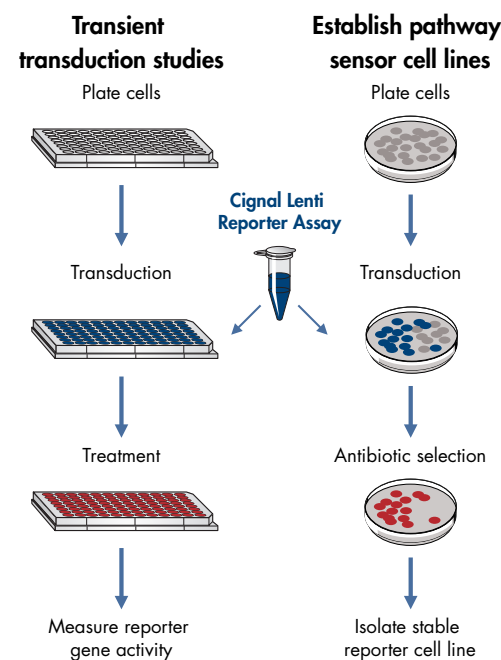


Figure 2. Overview of Cignal Lenti Reporter Assay applications. Cignal Lenti Reporter Assays are ready for transduction right out of the box. There is no need to generate or propagate lentivirus in your laboratory. These vectors are useful for transient transduction studies in difficult-to-transfect cells or for pathway sensor cell line generation.



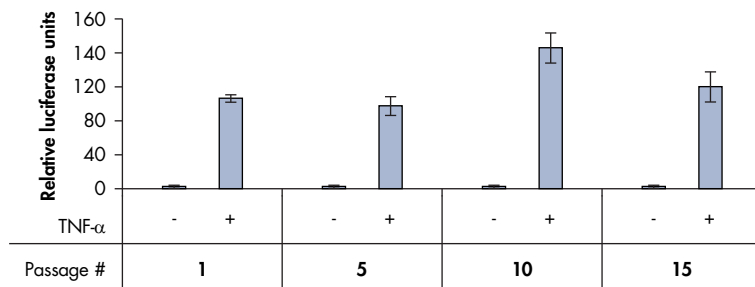


Figure 3. Generation of a stable NFκB pathway sensor cell line using Signal Lenti Reporter Assays. An NFκB sensor cell line was developed by transduction of HEK-293 cells with a NFκB Signal Lenti Reporter Assay, followed by selection of a clonal population that maintained stable chromosomal integration of the lentiviral vector provirus and responded strongly to stimuli known to activate the NFκB pathway. The generation of a stable HEK-293 NFκB sensor cell line was confirmed by testing the responsiveness of the cell line toward 10 ng/ml of TNFα protein after the 1st, 5th, 10th, and 15th passage of the cell line. Stimulation of the NFκB pathway by TNFα results in a 100-fold increase in expression of the reporter gene even after 2 months of culture.

Signal Lenti Reporter Assays

Pathway	Transcription factor	Luciferase	GFP
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	■	
EGR1	EGR1	■	
ER Stress	CBF/NF-Y/YY1	■	
Heavy Metal Stress	MTF1	■	
Hedgehog	GLI	■	
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	■	■

Pathway	Transcription factor	Luciferase	GFP
MEF2	MEF2	■	
Myc	MYC/MAX	■	
Nanog	NANOG	■	
NFκB	NFκB	■	■
Notch	RBP-Jκ	■	■
Oct4	OCT4	■	
PI3K/AKT	FOXO	■	
PKC/Ca ⁺⁺	NFAT	■	
Retinoic Acid	RAR	■	
Retinoid X	RXR	■	
SP1	SP1	■	
STAT3	STAT3	■	
TGFβ	SMAD2/3/4	■	
Vitamin D	VDR	■	
Wnt	TCF/LEF	■	■
Positive Control		■	■
Negative Control		■	■

Ordering Information

Product	Contents	Cat. no.
Signal Lenti Reporter Assays	1 or 8 tubes with inducible firefly luciferase or GFP reporter	336851
Signal Lenti Reporter Controls	Positive or negative controls with GFP, RFP, or luciferase	336891

Discover more at www.sabiosciences.com/cellassay.php !

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