

Benefits:

Multiplex - One assay allows the measurement of the activities for various transcription factors.

Quantitative comparison - Differences between samples can be quantitatively compared and analyzed.

Simple procedures - User friendly procedures similar to ELISA.

No special requirement - Capital instrument such as Luminex is not needed.

TF Activation Profiling Plate Array I

Transcription factors (TFs) are a group of cellular proteins that play essential roles in regulating gene expression. They act as sensors to monitor cellular change and convert the signals into altered gene expression. Often, a specific cellular signal pathway can activate multiple TFs and the expression of a specific gene is under control of multiple TFs. Hence, monitoring the activation of multiple TFs simultaneously is critical to understand the molecular mechanism of cellular regulation underlying cell signaling and gene expression. Signosis' TF activation profiling plate array I is used for monitoring **48 different TFs** including NFkB, AP1, HIF1, and p53.

List of Applicable TFs:

	1	2	3	4	5	6	7	8	9	10	11	12
A	AP1	CDP	GATA	NF-1	Pit	Stat3	AP1	CDP	GATA	NF-1	Pit	Stat3
B	AP2	CREB	GR/PR	NFAT	PPAR	Stat4	AP2	CREB	GR/PR	NFAT	PPAR	Stat4
C	AR	E2F-1	HIF	NF-E2	PXR	Stat5	AR	E2F-1	HIF	NF-E2	PXR	Stat5
D	ATF2	EGR	HNF4	NFkB	SMAD	Stat6	ATF2	EGR	HNF4	NFkB	SMAD	Stat6
E	Brn-3	ER	IRF	OCT4	Sp1	TCF/LEF	Brn-3	ER	IRF	OCT4	Sp1	TCF/LEF
F	C\EBP	Ets	MEF2	p53	SRF	TR	C\EBP	Ets	MEF2	p53	SRF	TR
G	CAR	FAST-1	Myb	Pax-5	SATB1	YY1	CAR	FAST-1	Myb	Pax-5	SATB1	YY1
H	CBF	GAS/ISRE	Myc-Max	Pbx1	Stat1	TFIID	CBF	GAS/ISRE	Myc-Max	Pbx1	Stat1	TEIID

TF Activation Profiling Plate Array II

Transcription factors (TFs) are a group of cellular proteins that play essential roles in regulating gene expression. Often, a specific cellular signal pathway can activate multiple TFs and the expression of a specific gene is under control of multiple TFs. Therefore, monitoring the activation of multiple TFs simultaneously is very important. Different from TF Activation Profiling Plate Array I, Signosis' TF activation profiling plate array II is used for monitoring **96 different TFs** including NFkB, AP1, HIF1, and p53. Two 96-well plates are provided for the comparison of two samples.

List of Applicable TFs:

	1	2	3	4	5	6	7	8	9	10	11	12
A	AP1	CDP	GATA	NF-1	Pit	Stat3	XBP	FOXG1	HoxA-5	NRF2(A)	ProX1	SOX2
B	AP2	CREB	GR/PR	NFAT	PPAR	Stat4	AP3	FOXO1	HSF	Oct-1	RB	SOX9
C	AR	E2F-1	HIF	NF-E2	PXR	Stat5	AP4	FREAC-2	KLF4	Pax2	RUNX	SOX18
D	ATF2	EGR	HNF4	NFkB	SMAD	Stat6	COUP-TF	Gfi-1	MyoD	Pax3	ROR(RZR)	TFE3
E	Brn-3	ER	IRF	OCT4	Sp1	TCF/LEF	ELK	Gli-1	MZF	Pax8	RXR	TFEB
F	C\EBP	Ets	MEF2	p53	SRF	TR	FOXA1	HEN (NSCL-1)	Nkx2-5	PIT1	SF-1	USF-1
G	CAR	FAST-1	Myb	Pax-5	SATB1	YY1	FOXC1	HNF-1	Nkx3-2	PLAG1	SMUC	VDR
H	CBF	GAS/ISRE	Myc-Max	Pbx1	Stat1	TFIID	FOXD3	HOX4C	NRF1	MEF1	Snail	WT1

Stem Cell TF Activation Profiling Plate Array I

Stem cells are important cells characterized by their ability to self-renew or differentiate into many cell types, which is governed by intracellular signaling pathway and transcription regulation. Hence, transcription regulation plays a determinant role in conferring cellular identity and function. The step-wise maturation of stem cells into terminally differentiated cell types requires the timely activation of a cascade of transcription programs governed by lineage-specifying transcription factors. Multiple transcription factors and target genes have been widely reported to associate with stem cell self-renewal and pluripotency, including EGR1, OCT4, FOXD3, FOXO, Nanog, SOX2, SOX18, ETS, GLI, KLF4, MEF2, Myc, RUNX1, Pax6, TCF/LEF and GATA. Signosis has developed Stem Cell Transcription Factor Activation Plate Array to analyze the activities of 16 stem cell-specific TFs simultaneously in mammalian samples. The assay can be used with the whole cell lysis from 1000-10000 cells.

List of Applicable TFs:

	1	2	3	4	5	6	7	8	9	10	11	12
A	EGR1	Ets	EGR1	Ets	EGR1	Ets	EGR1	Ets	EGR1	Ets	EGR1	Ets
B	FoxD3	Gli	FoxD3	Gli	FoxD3	Gli	FoxD3	Gli	FoxD3	Gli	FoxD3	Gli
C	FoxO1	KLF4	FoxO1	KLF4	FoxO1	KLF4	FoxO1	KLF4	FoxO1	KLF4	FoxO1	KLF4
D	GATA	MEF2	GATA	MEF2	GATA	MEF2	GATA	MEF2	GATA	MEF2	GATA	MEF2
E	Nanog	Myc	Nanog	Myc	Nanog	Myc	Nanog	Myc	Nanog	Myc	Nanog	Myc
F	OCT4	RUNX1	OCT4	RUNX1	OCT4	RUNX1	OCT4	RUNX1	OCT4	RUNX1	OCT4	RUNX1
G	SOX2	Pax6	SOX2	Pax6	SOX2	Pax6	SOX2	Pax6	SOX2	Pax6	SOX2	Pax6
H	SOX18	TCF/LEF	SOX18	TCF/LEF	SOX18	TCF/LEF	SOX18	TCF/LEF	SOX18	TCF/LEF	SOX18	TCF/LEF

Cancer Stem Cell TF Activation Profiling Plate Array

Transcriptional regulation plays a critical role in the control of biological processes, and transcription factors have been considered as master switches for cell fate determination. The cancer stem cell paradigm postulates that decontrolled tissue-specific stem cells or progenitor cells are precursors for cancer biogenesis. Cancer stem cells are a subset of cancer cells within a tumor that have stem cell-like characteristics. During tumorigenesis, deregulated transcription factor expression or activation can promote abnormal self-renewal, proliferation, and differentiation of the cells. For example, OCT4, Sox2, KLF4, Myc and Nanog have been shown to possess the power to reprogram somatic cells into pluripotent cells by reactivating pluripotent genes and silencing somatic genes. Understanding the activation patterns of cancer stem cell related transcription factors in a tumor can help to understand the transcriptional mechanism of cancer stem cell and provide better approaches for targeting and eliminating cancer stem cells.

List of Applicable TFs:

	1	2	3	4	5	6	7	8	9	10	11	12
A	Androgen	KLF4	Snail	Androgen	KLF4	Snail	Androgen	KLF4	Snail	Androgen	KLF4	Snail
B	AP1 (Jun)	Myc	SOX2	AP1 (Jun)	Myc	SOX2	AP1 (Jun)	Myc	SOX2	AP1 (Jun)	Myc	SOX2
C	AP2	Nanog	SOX9	AP2	Nanog	SOX9	AP2	Nanog	SOX9	AP2	Nanog	SOX9
D	CREB	NFkB1	STAT3	CREB	NFkB1	STAT3	CREB	NFkB1	STAT3	CREB	NFkB1	STAT3
E	ER	NKX3.1	TBX3	ER	NKX3.1	TBX3	ER	NKX3.1	TBX3	ER	NKX3.1	TBX3
F	FoxO3	Oct-3/4	Twist-1	FoxO3	Oct-3/4	Twist-1	FoxO3	Oct-3/4	Twist-1	FoxO3	Oct-3/4	Twist-1
G	GU	p53	WT1	GU	p53	WT1	GU	p53	WT1	GU	p53	WT1
H	HIF-1	PRDM14	Blank	HIF-1	PRDM14	Blank	HIF-1	PRDM14	Blank	HIF-1	PRDM14	Blank

Oxidative Stress TF Activation Profiling Plate Array

Oxidative stress occurs when the steady-state balance between pro-oxidant and anti-oxidant is changed, and oxidative stress has been reported to associate with many diseases, such as cancer, Alzheimer's disease, Parkinson's disease, atherosclerosis, and heart failure. Responses to oxidative stress are mediated by a large number of transcription factors (TFs).

Signosis has developed the Oxidative Stress TF Activation Profiling Plate Array, which can be used to simultaneously monitor 16 oxidative stress related TFs, including **AP1, ATF4, CBF/NFY, EGR1, ETS, FOXO1, HIF, HSF, IRF, NFAT, NFkB, NRF2/ARE, p53, Smad, SRF, and Stat3.**

List of Applicable TFs:

	1	2	3	4	5	6	7	8	9	10	11	12
A	AP1	IRF	AP1	IRF	AP1	IRF	AP1	IRF	AP1	IRF	AP1	IRF
B	ATF4	NFAT	ATF4	NFAT	ATF4	NFAT	ATF4	NFAT	ATF4	NFAT	ATF4	NFAT
C	CBF/NFY	NFkB	CBF/NFY	NFkB	CBF/NFY	NFkB	CBF/NFY	NFkB	CBF/NFY	NFkB	CBF/NFY	NFkB
D	EGR1	NRF2/ARE	EGR1	NRF2/ARE	EGR1	NRF2/ARE	EGR1	NRF2/ARE	EGR1	NRF2/ARE	EGR1	NRF2/ARE
E	ETS	P53	ETS	P53	ETS	P53	ETS	P53	ETS	P53	ETS	P53
F	FOXO1	Smad	FOXO	Smad	FOXO	Smad	FOXO	Smad	FOXO	Smad	FOXO	Smad
G	HIF	SRF	HIF	SRF	HIF	SRF	HIF	SRF	HIF	SRF	HIF	SRF
H	HSF	Stat3	HSF	Stat3	HSF	Stat3	HSF	Stat3	HSF	Stat3	HSF	Stat3

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