



## Human Growth Factor ELISA Strip II for Profiling 8 Proteins

Catalog Number EA-1101

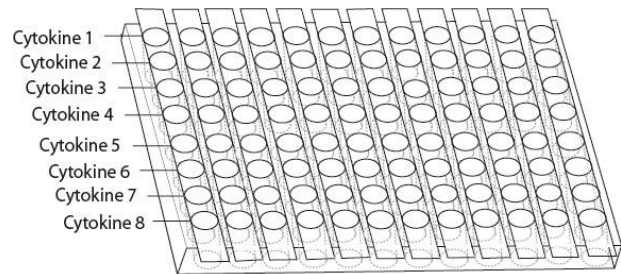
(For Research Use Only)

### Introduction

Growth factors are a family of proteins capable of stimulating cellular growth, proliferation and cellular differentiation. They typically act as signaling molecules by binding to receptors on the cell surface. Many growth factors are quite versatile, stimulating cellular division in numerous different cell types; while others are specific to a particular cell-type. Multiple growth factors often together participate in cellular functions. For example, VEGF, FGF, and EGF stimulate angiogenesis. Therefore, profiling the expression pattern of growth factors provides a valuable insight to the biological mechanisms underlying cellular functions. Signosis' Human Growth Factor ELISA Strip II quantitatively profiles and measures 8 proteins; VEGF, EGF, PDGF-BB, NGF-b, SCF, TNF $\alpha$ , FGFb, and TGFb. The difference of these proteins between two samples can be determined through data comparison.

### Principle of the assay

In each well of the strip, a primary antibody against a specific growth factor is coated and 8 wells of the strip are coated with 8 different antibodies. Therefore, total 8 wells of a strip allow measurement of 8 different growth factors. The test sample is allowed to react simultaneously with pairs of two antibodies, resulting in the growth factors being sandwiched between the solid phase and enzyme-linked antibodies. After incubation, the wells are washed to remove unbound-labeled antibodies. A HRP substrate, TMB, is added to result in the development of a blue color. The color development is then stopped with the addition of Stop Solution changing the color to yellow. The concentrations of the growth factors are directly proportional to the color intensity of the test sample. Absorbance is measured spectrophotometrically at 450 nm.



Incubate with Detection Antibody Mixture

Incubate with HRP-Streptavidin

OD450 Reading

Diagram of Human Growth Factor ELISA Strip II

### Materials provided with the kit

Component	Qty	Store at
<b>12 strip Plate coated with 8 different antibodies against human growth factors II</b>	1	4°C
<b>Biotin labeled antibody mixture against 8 different human growth factors II</b>	200 $\mu$ L	-20°C
<b>Streptavidin-HRP conjugate</b>	50 $\mu$ L	4°C
<b>1xDiluent buffer</b>	40mL	4°C
<b>5X Assay wash buffer</b>	40mL	4°C
<b>Substrate</b>	10mL	4°C
<b>Stop solution</b>	5mL	4°C

## Reagent preparation before starting experiment

- Dilute the 5x Assay wash buffer to 1x buffer
  - 40ml 5x Assay wash buffer
  - 160ml ddH<sub>2</sub>O
- Dilute 50 times of biotin labeled antibody mixture with 1X Diluent buffer.  
(AVOID FREEZE/THAW OF ANTIBODY)
- Dilute 200 times of streptavidin-HRP with 1X Diluent buffer.

## Sample preparation before starting experiment

- For **culture medium samples**, add 100µl directly to the well.
- For **cell lysate samples**, use cell lysis buffer (Catalog# EA-0001). Follow protocol in Cell Lysate Buffer User Manual.
- For **serum or plasma samples**, we recommend a 1:10 dilution with 1X diluent buffer, for example, add 80ul sample in 720ul 1X diluent buffer. When serum-containing conditional media is required, be sure to use serum as control.

## Recommendation

- The product intends to be used for comparison of 12 different samples. The differences of the growth factors among the samples can be easily identified and determined.
- If you would like to quantitatively measure the human growth factors in the samples, please order EA-1102. It is protein standards which can be used for making standard curves through a series of 2-fold dilutions.  
(Following EA-1102 user manual)

## Assay procedure

1. Take the desired number of well strips from the plate. Make sure the rest of strips are well sealed.
  2. Standard curve:  
If protein standard curve is desired, 4-5 strips may be used to make Standard curve (Please see the user manual for EA-1102 for detail).
  3. Sample assay:  
Apply each sample in one strip, 100ul per well and incubate for 1-2 hour at room temperature with gentle shaking.
  4. Aspirate each well and wash by adding 200µl of 1X Assay wash buffer. Repeat the process three times for a total of three washes. Completely remove liquid at each wash. After the last wash, remove any remaining liquid by inverting the plate against clean paper towels.
  5. Add 100µl of diluted biotin-labeled antibody mixture to each well and incubate for 1 hour at room temperature with gentle shaking.
  6. Repeat the aspiration/wash as in step 4.
  7. Add 100 µl of diluted streptavidin-HRP conjugate to each well and incubate for 45 min at room temperature with gentle shaking.
  8. Repeat the aspiration/wash as in step 4.
  9. Add 100µl substrate to each well and incubate for 10-30 minutes.
- Note: Substrate incubation time may vary due to different antibodies reactivity. Stronger signals (Strong blue color) could be stopped early after 5 minutes. Weaker signals should be incubated for 10-30 minutes. Always stop the reaction of samples from the same row at the same time.**
10. Add 50µl of Stop solution to each well. The color in the wells should change from blue to yellow.
  11. Determine the optical density of each well with a microplate reader at 450 nm within 30 minutes.

## Human Growth Factor ELISA Strip II Diagram

	1	2	3	4	5	6	7	8	9	10	11	12
A	VEGF	VEGF	VEGF	VEGF	VEGF	VEGF	VEGF	VEGF	VEGF	VEGF	VEGF	VEGF
B	EGF	EGF	EGF	EGF	EGF	EGF	EGF	EGF	EGF	EGF	EGF	EGF
C	PDGF-BB	PDGF-BB	PDGF-BB	PDGF-BB	PDGF-BB	PDGF-BB	PDGF-BB	PDGF-BB	PDGF-BB	PDGF-BB	PDGF-BB	PDGF-BB
D	β-NGF	β-NGF	β-NGF	β-NGF	β-NGF	β-NGF	β-NGF	β-NGF	β-NGF	β-NGF	β-NGF	β-NGF
E	SCF	SCF	SCF	SCF	SCF	SCF	SCF	SCF	SCF	SCF	SCF	SCF
F	TNFα	TNFα	TNFα	TNFα	TNFα	TNFα	TNFα	TNFα	TNFα	TNFα	TNFα	TNFα
G	FGFb	FGFb	FGFb	FGFb	FGFb	FGFb	FGFb	FGFb	FGFb	FGFb	FGFb	FGFb
H	TGFβ	TGFβ	TGFβ	TGFβ	TGFβ	TGFβ	TGFβ	TGFβ	TGFβ	TGFβ	TGFβ	TGFβ