

## Human alpha Fetoprotein ELISA Instructions

Cat:EH0203

## Content

	CAT	Volume
① CP (Coated Plate)	EH0203CP	96 well
② S (Standard)	EH0203S	2 vial
③ DA (Detect Antibody) 100×	EH0203DA	50 µl/vial
④ SD (Sample Diluent)	ESD02	15ml/bottle
⑤ DD (Detect Antibody Diluent)	EDD02	6 ml/bottle
⑥ AB (Assay Buffer 1×)	EAB01	12 ml/bottle
⑦ TS (TMB Substrate)	ETS01	12 ml/bottle
⑧ SS (Stop Solution)	ESS01	12 ml/bottle
⑨ WB (Wash Buffer 10×)	EWB01	50 ml/bottle
⑩ SF (Sealer Film)	ESF01	6 pieces

**NOTE:** After the kit is opened, the stabilization period of each content is 30 days, so please use the kit within 30 days after opening.

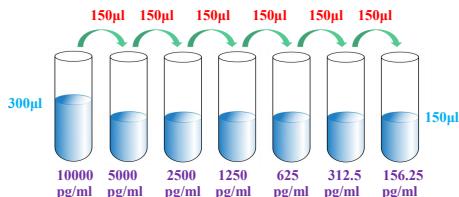
## REAGENT PREPARATION

**Standard Curve Preparation:**

Reconstitute human alpha Fetoprotein Standard by addition of distilled water as S. Reconstitution volume is stated on the label of the standard vial. Swirl or mix gently to insure complete and homogeneous solubilization (concentration of reconstituted standard = 100000pg/ml).

Allow the standard to reconstitute for 10-30 minutes. Mix well prior to making dilutions.

The human alpha Fetoprotein Standard EH0203S as the high standard (100000pg/ml). Pipette 150 µl of SD into each tube. Use the high standard to produce a 1:1 dilution series. Mix each tube thoroughly before the next transfer. SD serves as the zero standard (0 pg/ml).

**Washing Buffer (1×) Preparation**

Pour entire contents (50 ml) of the **Washing Buffer Concentrate** (10×) into a clean 500 ml graduated cylinder. Bring to final volume of 500 ml with glass-distilled or deionized water. Transfer to a clean wash bottle and store at 2 to 25°C.

**1×DA Preparation:**

Mix well prior to making dilutions.

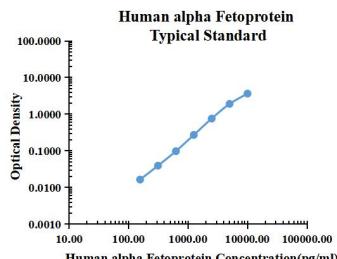
Make a 1:100 dilution of the concentrated Detect Antibody solution with **DD** (Detect Antibody Diluent) in a clean plastic tube as needed according to the Standards and Samples.

## ASSAY PROCEDURE

Bring all reagents and samples to room temperature before use.

- 1 Prepare all reagents and working standards as directed in the previous sections.
- 2 Remove excess **CP** (Coated Plate) strips from the plate frame, return them to the foil pouch and reseal.
- 3 Add 50 µl of **AB** (Assay Buffer) to each well.
- 4 Add 50 µl or 10 µl of **Standard or sample** per well. Ensure reagent addition is uninterrupted and completed within 15 minutes.
- 5 Add 50 µl of **DA** (Detect Antibody) to each well.
- 6 Cover with an **SF** (Sealer Film). Incubate at room temperature (18 to 25°C) for 1 hour on a microplate shaker set at 500 rpm.
- 7 Aspirate each well and **wash**, repeating the process four times. Wash by filling each well with **WB** (Washing Buffer 300 µl). Complete removal of liquid at each step is essential to good performance. After the last wash, remove any remaining **WB** (Washing Buffer) by aspirating or decanting. Invert the plate and **blot** it against clean paper towels.
- 8 Add 100 µl of **SH** (Streptavidin-HRP) to each well.
- 9 Cover with a new **SF** (Sealer Film). Incubate at room temperature (18 to 25°C) for 30 min on a microplate shaker set at 500 rpm.
- 10 Repeat aspiration/**wash** as in step 7.
- 11 Add 100 µl of **TS** (TMB Substrate) to each well. Incubate for 5-30 minutes at room temperature.
- 12 Add 100 µl of **SS** (Stop Solution) to each well.
- 13 Determine the optical density within 30 minutes, using microplate **reader** set to 450 nm corrected with 570 nm or 630 nm.

## TYPICAL DATA



pg/ml	O.D.	Average	Corrected
0.00	0.0071	0.0068	0.0070
156.25	0.0240	0.0229	0.0235
312.50	0.0454	0.0476	0.0465
625.00	0.1040	0.1062	0.1051
1250.00	0.2739	0.2848	0.2794
2500.00	0.7521	0.7844	0.7683
5000.00	1.9240	1.9110	1.9175
10000.00	3.6510	3.6680	3.6595

## SENSITIVITY

The minimum detectable dose (MDD) of human alpha Fetoprotein is typically less than 6.88 pg/ml (50  $\mu$ l of sample volume) or 32.49 pg/ml (10  $\mu$ l of sample volume).

The MDD was determined by adding two standard deviations to the mean optical density value of ten zero standard replicates and calculating the corresponding concentration.

## PRECISION

**Intra-assay Precision (Precision within an assay)** Three samples of known concentration were tested twenty times on one plate to assess intra-assay precision.

**Inter-assay Precision (Precision between assays)**

Sample Number	Intra-assay Precision			Inter-assay Precision		
	S1	S2	S3	S1	S2	S3
22	22	22	22	6	6	6
Average (pg/ml)	184.3	899.0	2654.9	187.9	893.6	2794.1
Standard Deviation	14.1	56.6	92.1	6.7	37.5	36.0
Coefficient of Variation (%)	7.6	6.3	3.5	3.6	4.2	1.3

## RECOVERY

The spike recovery was evaluated by spiking 3 levels of human alpha Fetoprotein into healthy human serum sample. The un-spiked serum was used as blank in this experiment.

The recovery ranged from 86% to 110% with an overall mean recovery of 95%.

## LINEARITY

To assess the linearity of the assay, five samples were spiked with high concentration of alpha Fetoprotein in human serum and diluted with Sample Diluent to produce samples with values within the dynamic range of the assay.

The linearity ranged from 90% to 105% with an overall mean recovery of 101%.

## SAMPLE VALUES

**Serum/Plasma** – Thirty samples from apparently healthy volunteers were evaluated for the presence of human alpha Fetoprotein in this assay. No medical histories were available for the donors.

Sample Matrix	Sample Evaluated	Range (pg/ml)	Detectable %	Mean of Detectable (pg/ml)
Serum	30	969.07-5411.95	100	2341.85

n.d. = non-detectable. Samples measured below the sensitivity are considered to be non-detectable.