



VeriKine-HS™ Human Interferon Beta Serum ELISA Kit

Certificate of Analysis & Protocol A

(Recommended for Improved Serum Performance)

Assay Range: 1.20 - 150 pg/ml

Compatibility: Serum, Plasma, Tissue Culture Media (TCM)

Assay Length: 3 hr 30 min

Catalog No: 41415-1

Lot No: 7559

Expiration: October 31, 2023

Store all components at 2-8°C

Kit Components	Part No.	Lot No.	Quantity
Plate(s)	SMP138	K7070	1
Plate Sealers	N/A	N/A	4
Wash Solution Concentrate	SMP057-60	K7078	2 x 50 ml
Human IFN-Beta Standard, 100,000 pg/ml	SMP146-1	K7073	1 vial
Standard Diluent	SMP163-30	K7077	25 ml
Sample Buffer	SMP147-15	K6909	15 ml
Antibody Concentrate	SMP148-1	K7075	1 vial
HRP Conjugate Concentrate	SMP056-320	K7076	1 vial
Assay Diluent	ASD-30	314897	25 ml
Diluent Additive III	SMP209-2	DA082	1.24 ml
TMB Substrate Solution	KET-15	220103D03	15 ml
Stop Solution	SCY-15	67088	15 ml

Product Performance Specifications

	Standard Diluent	Human Serum	TCM (10% FBS)
Intra-Assay CV	≤ 8%	≤ 6%	≤ 8%
Inter-Assay CV	≤ 10%	≤ 10%	≤ 10%

Authorization

Released by: 

Date: October 24, 2022

NOTE: Methods associated with collection, storage and testing of experimental samples have all been reported to affect ELISA results. Although extensive testing has been carried out to minimize sample matrix effects, the user should determine whether the test sample matrix adversely affects recovered IFN-β values.

PIPETTING TIPS: Due to the inherent nature of human IFN-β protein to adhere to plastic surfaces, proper pipetting technique is required to accurately prepare a standard curve and quantitate samples.

Aspirating: To avoid protein sticking to outside walls of the pipette tip, ensure it is not immersed in the standard vial when aspirating.

Dispensing and Diluting: Proper mixing technique entails pipetting up and down gently 10 times for predilution and S8 dilution; 5 times for subsequent serial dilutions. Thorough, but gentle, pipetting is required to recover all material attached to the inside of the tip. Avoid excessive force or foaming to prevent denaturing.

CAUTION: Certain kit components are considered hazardous and should be handled with appropriate safety precautions and discarded properly. For specific information, consult the safety data sheet (SDS).

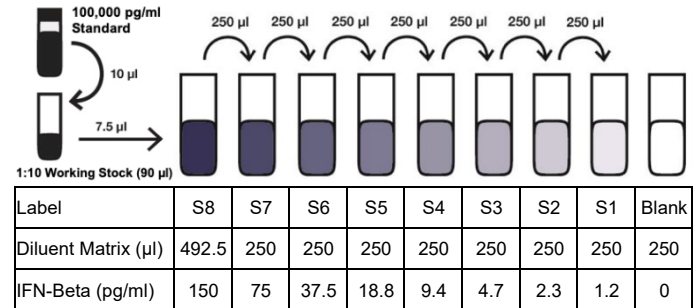
PREPARATION OF REAGENTS

Wash Solution: Wash Solution Concentrate may contain crystals; place in a warm water bath and gently mix until completely dissolved. Prepare a 1:10 working wash solution (e.g. Add 50 ml Wash Solution Concentrate to 450 ml distilled or deionized water). Mix thoroughly before use. Store at RT (22-25°C).

Human IFN-Beta Standard Curve Preparation:

- Label eight polypropylene tubes (S1 – S8).
- Add indicated volume of Standard Diluent or Sample Matrix to each tube as indicated in Figure 1.
- Prepare *working stock* by pipetting 10 µl Standard into 90 µl Standard Diluent. Using 100 or 200 µl pipette, set the volume to 80 µl and mix thoroughly.
- Using polypropylene tips, add 7.5 µl of prediluted standard to S8 and mix thoroughly. Remove indicated amount from S8, add to S7, and mix thoroughly. Repeat to complete series to S1.

Figure 1: 8-Point Standard Curve Prepared in Standard Diluent



Sample Preparation: Thaw frozen sample tubes to Room Temperature (RT) (22-25°C) in either tap water or between the fingertips. If samples require dilution, prepare using Standard Diluent or Sample Matrix. Keep at RT until use. Measurements in duplicate are recommended.

Antibody Solution: Prior to use, dilute Antibody Concentrate in the volume of Assay Diluent + Diluent Additive III Mixture as shown below. Keep at RT until use.

Micro-plate Strips Used	2	4	6	8	10	12
Antibody Concentrate (µl)	13	20	27	33	40	47
(1) Assay Diluent (ml)	1.65	2.47	3.29	4.11	4.94	5.76
(2) Diluent Additive III	0.35	0.53	0.71	0.89	1.06	1.24
Total Volume (1 + 2) (ml)	2.0	3.0	4.0	5.0	6.0	7.0

HRP Solution: 15 minutes prior to use in step 2, dilute HRP Conjugate Concentrate in the volume of Assay Diluent as shown below. Keep at RT until use.

Micro-plate Strips Used	2	4	6	8	10	12
HRP Conjugate Concentrate (µl)	17	29	34	46	57	69
Assay Diluent (ml)	3.0	5.0	6.0	8.0	10.0	12.0

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ASSAY PROCEDURE

Bring to RT (22-25°C)	Keep at 2-8°C
Plate/Sealers	Human IFN-Beta Standard
Sample Buffer	Antibody Concentrate
Standard Diluent	HRP Conjugate Concentrate
Assay Diluent	
Diluent Additive III	
TMB Substrate Solution	
Stop Solution	
Matrices/Samples	

- **Incubations:** All incubations should be conducted in a closed chamber at RT, keeping the plate away from drafts.
- **Plate Washing:** All wells should be filled with a minimum of 300 µl of Wash Solution. Remove plate contents by inverting and blotting the plate on lint-free absorbent paper; tap the plate dry. (If an automated plate washer is used, we recommend soaking the plate in Wash Solution for 30 seconds between washes.)

1. Determine the number of microplate strips required. We recommend running both the standard and samples at least in duplicate. Remove extra microtiter strips from the frame, seal in the foil bag provided and store at 2-8°C. Unused strips can be used in later assays.

Total well volume = 150 µl (Step A + Step B + Step C)

Step A: Add 50 µl of **Sample Buffer** to every well.

Step B: Add 50 µl of diluted **Antibody Solution** to each well.

Step C: Add 50 µl of diluted **Standard, Test Samples** or **Blanks** (Standard Diluent or appropriate dilution matrix) to each designated well.

Cover with Plate Sealer and shake at 450 rpm at RT for 2 hours.

After 2 hours, empty plate contents and wash wells three times.

2. Add 100 µl of diluted **HRP Solution** to each well. Cover with Plate Sealer and shake plate at 450 rpm at RT for 30 minutes.

After 30 minutes, empty plate contents and wash wells four times.

3. Add 100 µl of **TMB Substrate Solution** to each well. Incubate **in the dark** at RT for 60 min. Do not use a Plate Sealer and **DO NOT SHAKE** during the incubation.

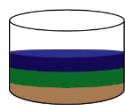
4. After 60 minutes, **DO NOT EMPTY THE WELLS AND DO NOT WASH**. Add 100 µl of **Stop Solution** to each well.

5. Using a microplate reader, determine the absorbance at 450 nm within 5 minutes after the addition of Stop Solution.

HUMAN IFN-BETA ELISA (41415) ASSAY PROCEDURE – QUICK REFERENCE

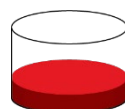
Total Time: 3 hr 30 min

Note: All incubations are at Room Temperature (RT) (22-25°C)*



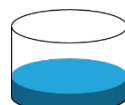
1. Add 50 µl Sample Buffer
 2. Add 50 µl Diluted Antibody Solution
 3. Add 50 µl Standard, Sample or Blank
- Incubate 2 hr (shake at 450 rpm) at RT**

Aspirate and Wash 3x

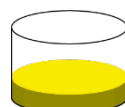


- Add 100 µl diluted HRP Solution
- Incubate 30 min (shake at 450 rpm) at RT**

Aspirate and Wash 4x



- Add 100 µl TMB Substrate
- Incubate 60 min in the dark*
- Do not seal, shake or wash.

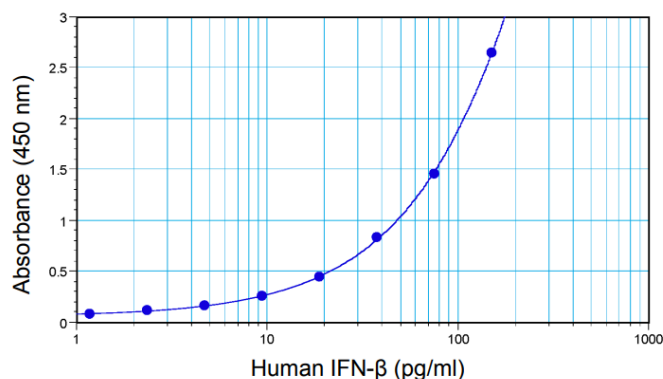


- Add 100 µl Stop Solution
- Read plate within 5 min (450 nm)

CALCULATION OF RESULTS

By plotting the optical densities (OD) using a 4-parameter fit for the standard curve, the interferon titer in the samples can be determined. Blank ODs may be subtracted from the standards and sample ODs to eliminate background. Use the conversion factor of 3 pg/unit to approximate titers in units/ml.

Figure 2: Typical Standard Curve in Standard Diluent



Visit PBL's website
(<https://pblsaysci.com/documentation>)
for additional information including
technical data sheet