

Catalog No: 41410-1

Lot No: 7792

Expiration: March 31, 2027

Store all components at 2-8°C

Kit Components	Part No.	Lot No.	Quantity
Plate(s)	SMP055	K7772	1
Plate Sealers	N/A	N/A	4
Wash Solution Concentrate	SMP057-60	K7568	50 ml
Human IFN-Beta Standard, 100,000 pg/ml	SMP146-1	K7775	1 vial
Sample Diluent	SMP067-30	K7776	30 ml
Antibody Concentrate	SMP062-1	K7777	1 vial
HRP Conjugate Concentrate	SMP056-180	K7778	1 vial
Concentrate Diluent	SMP024-30	K7769	30 ml
TMB Substrate Solution	KET-15	241003D02	15 ml
Stop Solution	SCY-15	80958	15 ml

Product Performance Specifications

Intra-Assay CV	≤ 8%
Inter-Assay CV	≤ 8%

Authorization

Released by: _____

Date: June 20, 2025

NOTE: The methods associated with the collection, storage, and testing of environmental samples have all been reported to affect ELISA results. For example, we have found that protein-free media provides poor results.

PIPETTING TIPS: Due to the inherent nature of Human IFN-Beta 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 S7 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.

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

CAUTION: Sample Diluent, Wash Solution Concentrate and Concentrate Diluent contain 0.1% Kathon CG/ICP as a preservative and should be handled with appropriate safety precautions and discarded properly. For further information, consult the safety data sheet (SDS).

PREPARATION OF REAGENTS

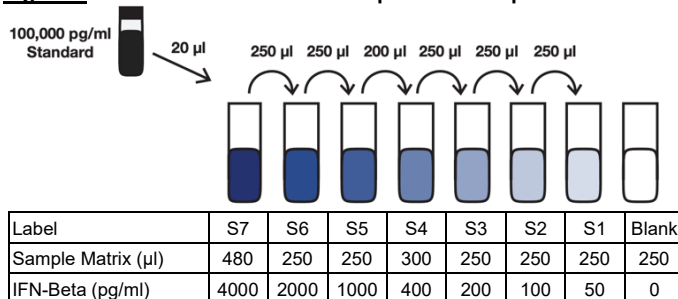
Wash Buffer: Wash Solution Concentrate may contain crystals; place in a warm water bath and gently mix until completely dissolved. Prepare a 1:10 Wash Buffer (e.g. Add 50 ml Wash Solution Concentrate to 450 ml distilled or deionized water). Mix thoroughly before use. Store at RT (22-25°C).

Human IFN-Beta Solution: Using the Human IFN-Beta Standard, construct a standard curve in the same matrix as the test samples. If the sample matrix is not available, the Sample Diluent may be used to prepare the sample curve. In certain situations, test samples may contain substances that can interfere with assay results.

Human IFN-Beta Standard Curve Preparation:

- Label seven polypropylene tubes (S1 – S7).
- Add indicated volume of Sample Matrix or Sample Diluent to each tube as indicated in [Figure 1](#).
- Using polypropylene tips, add 20 µl of Human IFN-Beta Standard to S7 and mix gently.
- Remove indicated amount from S7 and add to S6. Repeat to complete series to S1. Set on ice (2-8°C) until use in step 1.

Figure 1: 7-Point Standard Curve Prepared in Sample Matrix



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 Sample Diluent. Set on ice (2-8°C) until use in step 1. Measurements in duplicate are recommended.

Antibody Solution: 15 minutes prior to use in step 2, dilute Antibody Concentrate in volume of Concentrate Diluent shown below. Keep at RT (22-25°C).

Micro-plate Strips Used	2	4	6	8	10	12
Antibody Concentrate (µl)	5	10	15	20	25	30
Concentrate Diluent (ml)	2.0	4.0	6.0	8.0	10.0	12.0

HRP Solution: 15 minutes prior to use in step 3, dilute HRP Conjugate Concentrate in volume of Concentrate Diluent shown below. Keep at RT (22-25°C).

Micro-plate Strips Used	2	4	6	8	10	12
HRP Conjugate Concentrate (µl)	10	20	30	40	50	60
Concentrate Diluent (ml)	2.0	4.0	6.0	8.0	10.0	12.0

ASSAY PROCEDURE

Bring to RT (22-25°C)	Keep at 2-8°C
Plate/Sealers	Human IFN-Beta Standard
Sample Diluent	Antibody Concentrate
Concentrate Diluent	HRP Conjugate Concentrate
Stop Solution	
Wash Solution Concentrate	
TMB Substrate Solution (Bring to RT in step 3)	
Matrices/Samples	

- **Incubations:** Use plate sealers to cover the plate when directed. All incubations should be conducted in a closed chamber at 22-25°C or at RT, keeping the plate away from drafts.
- **Plate Washing:** All wells should be filled with a minimum of 250 µl of Wash Solution. Remove plate contents by inverting and blotting the plate on lint-free absorbent paper; tap the plate dry.

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 = 100 µl (Step A + Step B)

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

Step B: Add **50 µl** of **Standard, Test Samples** or **Blank** (Sample Diluent or appropriate dilution matrix) to each designated well.

Cover with Plate Sealer and incubate at RT for 1 hour.

After 1 hour, empty plate contents and wash wells three times.

2. Add **100 µl** of diluted **Antibody Solution** to each well.

Cover with Plate Sealer and incubate at RT for 1 hour.

After 1 hour, empty plate contents and wash wells three times.

3. Add **100 µl** of **HRP Solution** to each well.

Cover with Plate Sealer and incubate at RT for 1 hour. Warm **TMB Substrate Solution** to RT.

After 1 hour, empty plate contents and wash wells three times.

4. Add **100 µl** of **TMB Substrate Solution** to each well. Incubate **in the dark** at RT for 15 minutes. Do not use a Plate Sealer during the incubation.

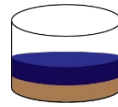
5. After 15 minutes, **DO NOT EMPTY THE WELLS AND DO NOT WASH**. Add **100 µl** of **Stop Solution** to each well.

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

HUMAN IFN-BETA ELISA (41410) ASSAY PROCEDURE – QUICK REFERENCE

Total Time: 3 hr 15 min

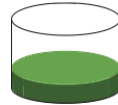
Note: All incubations are at Room Temperature (RT) (22-25°C)*



Add **50 µl** Sample Diluent
Add **50 µl** Standard, Sample, or Blank

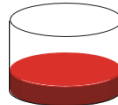
*Incubate 1 hr at RT**

Aspirate and Wash 3x



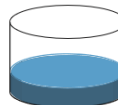
Add **100 µl** diluted Antibody Solution
*Incubate 1 hr at RT**

Aspirate and Wash 3x

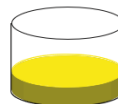


Add **100 µl** diluted HRP Solution
*Incubate 1 hr at RT**

Aspirate and Wash 3x



Add **100 µl** TMB Substrate
*Incubate 15 min in the dark at RT**
Do not seal, shake, or wash.

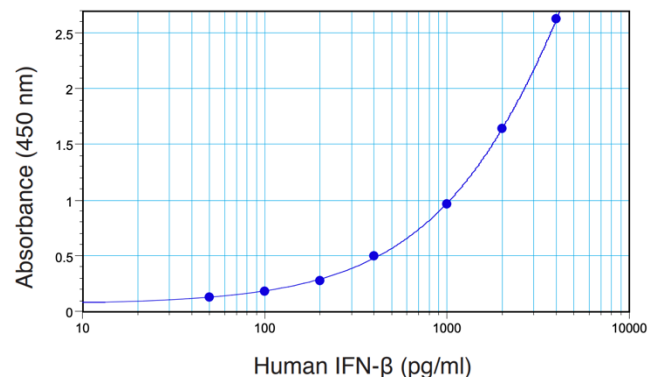


Add **100 µl** Stop Solution
Read plate within 5 min (450 nm)

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. An approximate conversion factor of about 3 – 10 pg/unit of Human IFN-Beta, mammalian, is applicable for Human IFN-Beta.

Figure 2: Typical Standard Curve



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