

# Human/Monkey/Canine IL-1 beta ELISA Instructions

## Cat:EH0006

### Content

|                         | CAT      | Volume       |
|-------------------------|----------|--------------|
| ① CP (Coated Plate)     | EH0006CP | 96 well      |
| ② S (Standard)          | EH0006S  | 2 vial       |
| ③ SD (Sample Diluent)   | ESD01    | 15 ml/bottle |
| ④ DA (Detect Antibody)  | EH0006DA | 6 ml/bottle  |
| ⑤ SH (Streptavidin-HRP) | ESH01    | 12 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

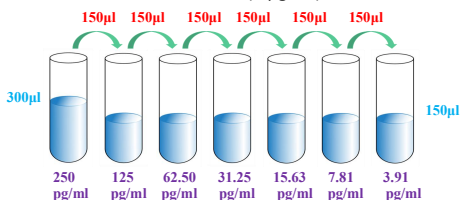
#### Standard Curve Preparation:

The **SD** (Sample Diluent) is used for serum and plasma. Other sample type, prepare the standard curve with whatever buffer (SPB, Sample Prepared Buffer) is used to prepare the sample, such as cell culture supernatant, tissue grinding liquid, cell lysate, etc. Urine sample use **AB** (Assay Buffer) prepare standard curve.

Reconstitute human IL-1 beta 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 = 2500 pg/ml).

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

The human IL-1 beta Standard EH0006S 2500 pg/ml 30  $\mu$ l + 270  $\mu$ l SPB serves as the high standard (250 pg/ml). Pipette 150  $\mu$ l of SPB into each tube. Use the high standard to produce a 1:1 dilution series. Mix each tube thoroughly before the next transfer. SPB serves as the zero standard (0 pg/ml).



#### Washing Buffer (1×) Preparation

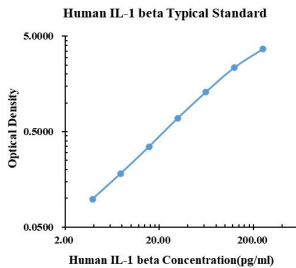
Pour entire contents (50 ml) of the **Washing Buffer Concentrate** (10×) into a clean 500 ml graduated cylinder. Bring to final volume of 500 ml with glass-distilled or deionized water. Transfer to a clean wash bottle and store at 2 to 25°C.

### ASSAY PROCEDURE

Bring all reagents and samples to room temperature before use.

- Prepare all reagents and working standards as directed in the previous sections.
- Remove excess **CP** (Coated Plate) strips from the plate frame, return them to the foil pouch and reseal.
- Add 50  $\mu$ l of **AB** (Assay Buffer) to each well.
- Add 50  $\mu$ l of **Standard or sample** per well. Ensure reagent addition is uninterrupted and completed within 15 minutes.
- Add 50  $\mu$ l of **DA** (Detect Antibody) to each well.
- 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.
- Aspirate each well and **wash**, repeating the process four times. Wash by filling each well with **WB** (Washing Buffer 300  $\mu$ l). 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.
- Add 100  $\mu$ l of **SH** (Streptavidin-HRP) to each well.
- 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.
- Repeat aspiration/**wash** as in step 7.
- Add 100  $\mu$ l of **TS** (TMB Substrate) to each well. Incubate for 5-30 minutes at room temperature.
- Add 100  $\mu$ l of **SS** (Stop Solution) to each well.
- 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   | 0.0296 | 0.0307  | 0.0302    |
| 3.91   | 0.1330 | 0.1232  | 0.1281    |
| 7.81   | 0.2132 | 0.2122  | 0.2127    |
| 15.63  | 0.3820 | 0.3760  | 0.3790    |
| 31.25  | 0.7406 | 0.6980  | 0.7193    |
| 62.50  | 1.3710 | 1.2880  | 1.3295    |
| 125.00 | 2.4490 | 2.3060  | 2.3775    |
| 250.00 | 3.7620 | 3.6230  | 3.6925    |

## SENSITIVITY

The minimum detectable dose (MDD) of human IL-1 beta is typically less than 0.09 pg/ml (50  $\mu$ 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-two 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   | 6                     | 6    | 6     |
| Average (pg/ml)              | 6.0                   | 29.6 | 93.7 | 7.2                   | 33.6 | 104.4 |
| Standard Deviation           | 0.3                   | 1.3  | 4.1  | 0.3                   | 1.0  | 2.0   |
| Coefficient of Variation (%) | 4.8                   | 4.5  | 4.4  | 4.1                   | 2.9  | 1.9   |

## RECOVERY

The spike recovery was evaluated by spiking 3 levels of human IL-1 beta into health human serum sample. The un-spiked serum was used as blank in this experiment.

The recovery ranged from 85% to 120% with an overall mean recovery of 95%.

## LINEARITY

To assess the linearity of the assay, five samples were spiked with high concentration of IL-1 beta in human serum and diluted with Sample Diluent to produce samples with values within the dynamic range of the assay.

The linearity ranged from 89% to 118% with an overall mean recovery of 94%.

## SAMPLE VALUES

Serum/Plasma – Thirty samples from apparently healthy volunteers, two samples from healthy monkeys and five samples from healthy canines were evaluated for the presence of human IL-1 beta in this assay. No medical histories were available for the donors.

| Sample Matrix | Sample Evaluated | Range (pg/ml) | Detectable % | Mean of Detectable (pg/ml) |
|---------------|------------------|---------------|--------------|----------------------------|
| Human Serum   | 30               | 1.56-60.87    | 100          | 15.59                      |
| Monkey Serum  | 2                | 48.96-51.40   | 100          | 50.18                      |
| Canine Serum  | 5                | 12.00-16.03   | 100          | 14.42                      |

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