

# Bovine Intact PTH ELISA Kit

For RESEARCH Use Only

Not for use in diagnostic procedures

# Immutopics

Immutopics, Inc.

96 Test Kit  
Cat. # 60-3500

Store at 2 - 8°C Upon Receipt

## INTENDED USE

This kit is intended for research use only in the determination of bovine PTH levels in serum, plasma or cell culture media.

## REAGENTS: Preparation and Storage

Store the reagents at 2-8°C upon receipt. **Store the standards and controls at -20°C or below after reconstitution.** For the expiration date refer to the label on the kit. All components are stable until this expiration date.

**Prior to use allow all reagents to come to room temperature and mix by gentle swirling and inversion.**

- 1. STREPTAVIDIN COATED MICROTITER PLATE (40-0010)**  
One plate with 12 eight well strips and frame (96 wells total). This reagent should be stored in the foil pouch with desiccant at 2 - 8°C and is stable until the expiration date on the kit.
  - 2. BIOTINYLATED BOVINE PTH ANTIBODY (40-3510)**  
One vial containing 2.7 mL of biotin labeled anti-bovine PTH in TRIS buffered saline with protein stabilizers and a non-azide, non-mercury preservative. This reagent should be stored at 2 - 8°C and is stable until the expiration date on the kit.
  - 3. HRP CONJUGATED BOVINE PTH ANTIBODY (40-3520)**  
One vial containing 2.7 mL of horseradish peroxidase conjugated to anti-bovine PTH in a stabilized protein solution with a non-azide, non-mercury preservative. This reagent should be stored at 2 - 8°C protected from light and is stable until the expiration date on the kit.
- NOTE: Make a Working Antibody Solution by combining equal volumes of Biotinylated Bovine PTH Antibody and HRP Conjugated Bovine PTH Antibody prior to use. Mix only the volume required for immediate use. Mix well to ensure homogeneity.**
- 4. BOVINE INTACT PTH STANDARDS (40-3531 to 40-3536) \***  
Six vials each containing human intact PTH (1-84) lyophilized in a human serum matrix with a non-azide, non-mercury preservative calibrated to bovine intact PTH. **Refer to vial label for exact concentration.** Before use reconstitute the vial with the intact PTH concentration of 0 pg/mL with 2.0 mL of deionized water. Before use reconstitute each of the other five lyophilized vials of standards with 1.0 mL of deionized water. Allow the vials to sit for approximately 20 minutes with occasional gentle swirling and inversion. Assure complete reconstitution before use.

Use the standards immediately after reconstitution; freeze the unused portion for later use. After reconstitution the standards are stable until the expiration date on the kit when stored at -20°C or below with up to 3 freeze/thaw cycles.

- 5. BOVINE INTACT PTH CONTROLS I & II (40-3541 & 40-3542) \***  
Two vials each containing human intact PTH (1-84) lyophilized in a human serum matrix with a non-azide, non-mercury preservative calibrated to bovine intact PTH. **Refer to vial label for control ranges.** Before use reconstitute each control with 1.0 mL of deionized water. Allow the vials to sit for approximately 20 minutes with occasional gentle swirling and inversion. Assure complete reconstitution before use.

Use the controls immediately after reconstitution; freeze the unused portion for later use. After reconstitution the controls are stable until the expiration date on the kit when stored at -20°C or below with up to 3 freeze/thaw cycles.

- 6. ELISA WASH CONCENTRATE (40-0041)**  
One vial containing 20 mL of a 20 fold concentrate. Before use dilute the contents to 400 mL with deionized water and mix well. Upon dilution this yields a working wash solution containing a surfactant in phosphate buffered saline with a non-azide, non-mercury preservative. The diluted wash solution should be stored at room temperature and is stable until the expiration date on the kit.
- 7. ELISA HRP SUBSTRATE (40-0026)**  
One bottle containing 11 mL of tetramethylbenzidine (TMB) with hydrogen peroxide. This reagent should be stored at 2 - 8°C protected from light and is stable until the expiration date on the kit.
- 8. ELISA STOP SOLUTION (40-0030)**  
One bottle containing 11 mL of 1 M sulfuric acid. This reagent may be stored at room temperature or at 2 - 8°C and is stable until the expiration date on the kit.
- 9. PLATE SEALER (20-2016)**  
Two included in kit.

## SAFETY PRECAUTIONS

Avoid contact with reagents containing TMB, hydrogen peroxide, or sulfuric acid (i.e. ELISA HRP Substrate and ELISA Stop Solution). In case of contact with any of these reagents, wash thoroughly with water. Use Good Laboratory Practices. Wash hands before eating. Do not eat, drink or smoke in the work area.

### CAUTION: Potential Biohazardous Material

HANDLE ASSAY REAGENTS AS IF CAPABLE OF TRANSMITTING AN INFECTIOUS AGENT.

The human source material used in the preparation of this product has been tested by an FDA approved method for the presence of antibodies to Human Immunodeficiency Virus (HIV I and HIV II) and to Hepatitis C virus (HCV), as well as for Hepatitis B surface antigen (HBsAg) and found to be negative. Because no test method can offer complete assurance that HIV I and HIV II, HCV, HBsAg or other infectious agents are absent, these reagents should be handled at the Biosafety Level 2 as recommended for any potentially infectious human urine, serum or blood specimen in the Centers for Disease Control/National Institutes of Health Manual "Biosafety in Microbiological and Biomedical Laboratories," 1993.

## ASSAY PROCEDURE

- Place a sufficient number of Streptavidin Coated Strips in a holder to run PTH standards, controls and unknown samples.
- Pipette 50 µL of standard, control, or sample into the designated or mapped well.
- Pipette 50 µL of the Working Antibody Solution consisting of equal volumes of Biotinylated Bovine PTH Antibody and HRP Conjugated Bovine PTH Antibody into each well.
- Cover the plate with one plate sealer, then cover with aluminum foil to avoid exposure to light.
- Incubate plate at room temperature for three (3) hours on a horizontal rotator set at 180 - 220 RPM.

\* See CROSS-REACTIVITY section

6. Remove the aluminum foil and plate sealer. **Using an automated microtiter plate washer aspirate the contents of each well. Wash each well five times by dispensing 350  $\mu$ L of working wash solution into each well and then completely aspirating the contents.** A suitable aspiration device may also be used.
7. Pipette 100  $\mu$ L of ELISA HRP Substrate into each of the wells.
8. Re-cover the plate with the plate sealer and aluminum foil. Incubate at room temperature for 30 minutes on a horizontal rotator set at 180 - 220 RPM.
9. Remove the aluminum foil and plate sealer. Read the absorbance at 620 nm (see Note) within 5 minutes in a microtiter plate reader against the 0 pg/mL Standard wells as a blank.
10. Immediately pipette 50  $\mu$ L of ELISA Stop Solution into each of the wells. Mix on horizontal rotator for 1 minute.
11. Read the absorbance at 450 nm within 10 minutes in a microtiter plate reader against a reagent blank of 100  $\mu$ L of Substrate and 50  $\mu$ L of Stop Solution.

*If dual wavelength correction is available set the Measurement wavelength to 450 nm and Reference wavelength to absorbance used in step #9.*

**NOTE: Absorbance may be read at wavelengths from 595 nm to 650 nm depending upon available filters.**

## PROCEDURAL NOTES

1. It is recommended that all standards, controls and samples be assayed in duplicate. The average absorbance reading of each duplicate should then be used for data reduction and the calculation of results.
2. Keep light sensitive reagents (i.e. HRP Conjugated Antibody, the Working HRP Antibody Solution consisting of combined HRP Conjugated Antibody and Biotinylated Antibody, and ELISA HRP Substrate) in the original amber bottles or other suitable container which is well protected from light.
3. Store any unused Streptavidin Coated Strips in the re-sealable aluminum pouch with desiccant to protect from moisture.
4. The sample and all reagents should be pipetted carefully to minimize air bubbles in the wells.
5. The sequence and timing of each reagent addition is important as both the immunological and enzymatic reactions are in kinetic modes. The washing step is also an important part of the total assay procedure. **The use of an automated microtiter plate washer is strongly recommended.** All pipeting and washing steps should be performed such that the timing is as consistent as possible.
6. Plasma or cell culture media samples may contain fibrin clots or cellular debris. Freeze/thaw of plasma samples may accelerate clot formation. These samples must be centrifuged and decanted prior to assay to remove all particulate material which can cause random high non-specific binding on well surface.
7. Rarely, upon opening the streptavidin plate, small white crystals may be observed in some of the wells. This is entirely cosmetic and will not affect the assay. This condition is reported by other kit manufacturers and results from the final stabilizing buffer used in the coating process.

## CALCULATION OF RESULTS

The two absorbance readings taken before and after the addition of the ELISA Stop Solution allow for the construction of two standard curves using the bovine PTH Standards contained in the kit. **Refer to the individual vial label for exact concentration.** The primary curve used for calculation of results is the second reading taken after the addition of the ELISA Stop Solution and read at 450 nm. This data utilizes the absorbance values obtained with the first five standards. The first reading taken before the addition of the ELISA Stop Solution and read at 595 nm–650 nm is intended to extend the analytical range to the value of the sixth (highest) standard provided in the kit. **This secondary curve should be used only for sample results that fall between the value of the fifth and sixth standard.** Results obtained with this reading should not replace the on-scale reading at 450 nm. Each curve should be generated as follows:

### Primary Procedure — Read at 450 nm

1. Calculate the average absorbance for each pair of duplicate assay wells.
2. Subtract the average absorbance of the 0 pg/mL Standard from the average absorbance of all other readings to obtain corrected absorbance.
3. The standard curve is generated by plotting the corrected absorbance of the first five standard levels on the ordinate against the standard concentration on the abscissa using linear-linear or log-log paper. Appropriate computer assisted data reduction programs may also be used for the calculation of results.

The PTH concentration of the controls and samples is read directly from the standard curve using their respective corrected absorbance. If log-log graph paper or computer assisted data reduction programs utilizing logarithmic transformation are used, samples having corrected absorbance between the 0 pg/mL Standard and the next highest standard should be calculated by the formula:

$$\text{Value of unknown} = \frac{\text{Corrected Absorbance (unknown)}}{\text{Corrected Absorbance (2}^{\text{nd}} \text{ Std.)}} \times \text{Value of the 2}^{\text{nd}} \text{ Std.}$$

### Secondary Procedure — Read at 595 nm to 650 nm

1. Calculate the average absorbance for each pair of duplicate assay wells.
2. The standard curve is generated by plotting the absorbance of the three highest standards on the ordinate against the standard concentration on the abscissa using linear-linear or log-log graph paper.
3. The PTH concentration of samples reading only between the fifth and sixth standard are read directly from the standard curve.

## SENSITIVITY

The sensitivity of this assay as determined on 16 duplicate determinations of the 0 pg eq/mL Standard is 10 pg eq/mL.

## CROSS-REACTIVITY

The antibodies used in this assay are two different affinity purified polyclonals isolated from goats immunized with human PTH. Both the HRP conjugated antibody, which binds to amino terminal epitopes, and the biotinylated antibody, which binds to mid-region epitopes, exhibit excellent recognition to bovine PTH.

\* Because purified bovine intact PTH 1-84 peptide is not available we have assigned bovine PTH 1-84 concentration equivalents to the standards and controls which are made from human PTH 1-84 peptide. The value assignment was made using previously available purified bovine peptide.

This assay will detect with varying degrees of cross-reactivity the PTH from other mammalian species.

## WARRANTY

This product is warranted to perform as described in its labeling and literature when used in accordance with all instructions. Immutopics, Inc. DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, and in no event shall Immutopics, Inc. be liable for consequential damages. Replacement of the product or refund of the purchase price is the exclusive remedy for the purchaser. This warranty gives you specific legal rights and you may have other rights which vary from state to state.

## CLIENT SERVICES

To place an order or for technical assistance, contact Immutopics International at (800) 681-6665 or (949) 369-9207 or FAX to (949) 369-9405 or e-mail: [clientservices@immutopicsintl.com](mailto:clientservices@immutopicsintl.com).

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