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**Rat IL-1 $\alpha$**   
**ELISA Development Kit**  
**900-K204 Lot# 0905204**  
**Expiration one year from date of receipt**

**Description:** Rat IL-1 $\alpha$  ELISA development kit contains the key components required for the quantitative measurement of natural and/or recombinant rIL-1 $\alpha$  in a sandwich ELISA format within the range of 16–1000pg/ml. Using the ELISA protocol described below, the recommended microplates, reagents and solutions, the components supplied in this kit are sufficient to assay rIL-1 $\alpha$  in approximately 1000 ELISA plate wells.

**RECONSTITUTION & STORAGE**

**Capture Antibody:** 100 $\mu$ g of antigen-affinity purified goat anti-rat IL-1 $\alpha$  + 2.5mg D-mannitol. Centrifuge vial prior to opening. Reconstitute in 1.0 ml sterile water for a concentration of 100 $\mu$ g/ml.

**Detection Antibody:** 25 $\mu$ g of biotinylated antigen-affinity purified goat anti-rat IL-1 $\alpha$  + 2.5mg D-mannitol. Centrifuge vial prior to opening. Reconstitute in 0.25ml sterile water for a concentration of 100 $\mu$ g/ml.

**Rat IL-1 $\alpha$  Standard:** 1 $\mu$ g of recombinant rat IL-1 $\alpha$  + 2.2mg BSA + 11.0mg D-mannitol. Centrifuge vial prior to opening. Reconstitute in 1ml sterile water for a concentration of 1 $\mu$ g/ml.

**Note:** The reconstituted components are stable for 2 weeks when stored at 2-8 $^{\circ}$ C. Components that have been reconstituted and aliquoted can be stored at -20 $^{\circ}$ C for up to 6 months.

**Avidin-HRP Conjugate:** 60 $\mu$ l vial. Upon receipt, avidin-HRP conjugate should be aliquoted into ten 6 $\mu$ l vials and stored at  $\leq$ -20 $^{\circ}$ C. Aliquots stored frozen at  $\leq$ -20 $^{\circ}$ C are stable for up to 2 years form date of receipt. Avoid more than one freeze-thaw cycle. **Avidin should be used in conjunction with ABTS only.**

**RECOMMENDED MATERIALS (or purchase PeproTech's ELISA Buffer Kit: Cat.# 900-K00)**

ELISA microplates (Nunc MaxiSorp Prod. # 439454, or Corning Prod # 3590);  
Tween-20 (Sigma Cat. # P-7949);  
BSA (Sigma Cat # A-7030);  
ABTS Liquid Substrate Solution (Sigma Cat. # A3219);  
Dulbecco's PBS [10x] (Gibco BRL Cat. # 14200-075).

**RECOMMENDED SOLUTIONS**

*All solutions should be at ambient temperature prior to use.*

**PBS:** dilute 10xPBS to 1xPBS, pH 7.20 in sterile water.

**Wash Buffer:** 0.05% Tween-20 in PBS

**Block Buffer:** 1% BSA in PBS \*

**Diluent:** 0.05% Tween-20, 0.1% BSA in PBS \*

**\* Sterile filter and store at 4 $^{\circ}$ C for up to 1 week.**

**PLATE PREPARATION**

1. Dilute capture antibody with PBS to a concentration of 1 $\mu$ g/ml. Immediately, add 100 $\mu$ l to each ELISA plate well. Seal the plate and incubate overnight at room temperature.

2. Aspirate the wells to remove liquid and wash the plate 4 times using 300 $\mu$ l of wash buffer per well. After the last wash invert plate to remove residual buffer and blot on paper towel.
3. Add 300 $\mu$ l block buffer to each well. Incubate for at least 1 hour at room temperature.
4. Aspirate and wash plate 4 times.

**ELISA PROTOCOL**

**Standard/Sample:** dilute standard from 1ng/ml to zero in diluent. Immediately add 100 $\mu$ l of standard or sample to each well in triplicate. Incubate at room temperature for at least 2 hours.

**Detection:** Aspirate and wash plate 4 times. Dilute detection antibody in diluent to a concentration of 0.25 $\mu$ g/ml. Add 100 $\mu$ l per well. Incubate at room temperature for 2 hours.

**Avidin-HRP Conjugate:** Aspirate and wash plate 4 times. Dilute 5.5 $\mu$ l of avidin-HRP conjugate 1:2000 in diluent for a total volume of 11ml. Add 100 $\mu$ l per well. Incubate 30 minutes at room temperature.

**ABTS Liquid Substrate:**

*(ABTS Substrate should be at ambient temperature prior to use)*

Aspirate and wash plate 4 times. Add 100 $\mu$ l of substrate solution to each well. Incubate at room temperature for color development. Monitor color development with an ELISA plate reader at 405 nm with wavelength correction set at 650 nm.

**NOTE:** Reliable standard curves are obtained when either O.D. readings do not exceed 0.2 units for the zero standard concentrations, or 1.2 units for the highest standard concentration. The plate should be monitored at 5-minute intervals for approximately 25 minutes. *O.D. readings may vary.*

**CROSS REACTIVITY**

When tested at 50ng/ml the following antigens exhibited less than 5% cross reactivity:

Murine IL-1 $\alpha$

When tested at 50ng/ml the following antigens did not exhibit significant cross reactivity:

Human IL-1 $\alpha$ , IL-1 $\beta$

Murine IL-1 $\beta$

Rat GM-CSF, GRO- $\beta$ , GRO/KC, IFN- $\gamma$ , IL-1 $\beta$ , IL-2, IL-3 $\beta$ , IL-4, IL-6, IL-7, IL-10, IL-13, RANTES, SCF, TNF- $\alpha$

