



<b>Catalog Number:</b>	GT15105	<b>Host:</b>	Goat
<b>Product Type:</b>	Affinity purified	<b>Species Reactivity:</b>	Rat
<b>Immunogen Sequence:</b>	Purified, <i>E. coli</i> -derived, recombinant rat interleukin 1 beta (rrIL-1 $\beta$ )	<b>Format:</b>	Liquid 1mg/ml Solution in phosphate-buffered saline (PBS) with 5% Trehlose
<b>Applications:</b>	Immunohistochemistry : 0.5-5 $\mu$ g/mL Western Blot: 0.1 - 0.2 $\mu$ g/mL ELISA Capture: 0.2 – 0.8 $\mu$ g/mL		

Dilutions listed as a recommendation. Optimal dilution should be determined by investigator.

**Storage:** Antibody can be aliquotted and stored frozen at -20° C to -70° C in a manual defrost freezer for six months without detectable loss of activity. The antibody can be stored at 2° - 8° C for 1 month without detectable loss of activity. *Avoid repeated freeze-thaw cycles.*

### Application Notes

#### Specificity

This antibody has been selected for its ability to neutralize the biological activity of rrIL-1 $\beta$  and for use as a capture antibody in rat IL-1 $\beta$  sandwich ELISAs. It will also neutralize the biological activity of rmlL-1 $\beta$ , but will not neutralize the biological activity of rhIL-1 $\beta$ , rhIL-1 $\alpha$  or rmlL-1 $\alpha$ . It can also be utilized for immunohistochemistry and western blotting.

#### Western blot

This antibody can be used at 0.1 – 0.2  $\mu$ g/mL with the appropriate secondary reagents to detect rat IL-1 $\beta$ . The detection limit for rrIL-1 $\beta$  is approximately 5 ng/lane and 2 ng/lane under non-reducing and reducing conditions, respectively. In Western blots, this antibody shows approximately 50% cross-reactivity with rmlL-1 $\beta$ , rhIL-1 $\beta$  and rpIL-1 $\beta$ .

#### Immunohistochemistry

This antibody can be used at 0.5 - 5  $\mu$ g/mL with the appropriate secondary reagents to detect rat IL-1 $\beta$  in cultured cells or tissue sections.

#### ELISA capture

This product can be used as a capture reagent in a rat IL-1 $\beta$  sandwich immunoassay in combination with biotinylated rat IL-1 $\beta$  detection antibody and recombinant rat IL-1 $\beta$  as the standard. The suggested coating concentration range is 0.2 - 0.8  $\mu$ g/mL and should be titrated to determine the optimal concentration. In this format, less than 1% cross-reactivity with rmlL-1 $\beta$  and less than 0.5% cross-reactivity with rhIL-1 $\beta$  and rpIL-1 $\beta$  is observed.

### FOR RESEARCH USE ONLY

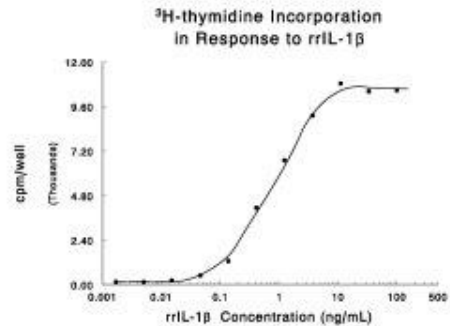
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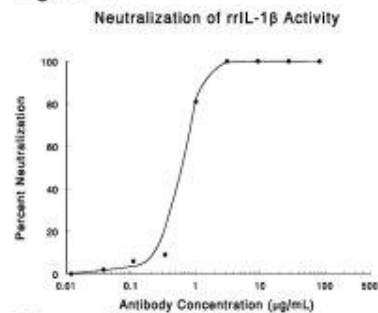
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**Neutralization of Rat IL-1 $\beta$  bioactivity** - The exact concentration of antibody required to neutralize rrIL-1 $\beta$  activity is dependent on the cytokine concentration, cell type, growth conditions and the type of activity studied. To provide a guideline, R&D Systems has determined the neutralization dose for this antibody under a specific set of conditions. The **Neutralization Dose<sub>50</sub> (ND<sub>50</sub>)** for this antibody is defined as that concentration of antibody required to yield one-half maximal inhibition of the cytokine activity on a responsive cell line, when that cytokine is present at a concentration just high enough to elicit a maximum response.



**Figure 1:** Rat IL-1 $\beta$  stimulates <sup>3</sup>H-thymidine incorporation by murine T-helper D10.G4.1 cells in a dose-dependent manner (Symons, J.A. *et al.*, 1987, in *Lymphokines and Interferons, A Practical Approach*, IRL Press, M.J. Clemens, A.G. Morris and A.J.H. Gearing, eds. p. 272). The ED<sub>50</sub> for this effect is typically 1 - 3 ng/mL.

**Figure 1**



**Figure 2:** Approximately 0.5 - 2.0  $\mu$ g/mL of the antibody will neutralize 50% of the bioactivity due to 10 ng/mL of rat IL-1 $\beta$ . The ND<sub>50</sub> for this lot of anti-rat IL-1 $\beta$  antibody was determined to be approximately 0.5 - 2  $\mu$ g/mL in the presence of 10 ng/mL of rrIL-1 $\beta$ , using the murine T-helper cell line, D10.G4.1. The specific conditions are described in the figure legends.

**Figure 2**

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