NEUROMICS

IL-1β   Data Sheet

Catalog Number:	GT15105	**Host:**	Goat
Product Type:	Affinity purified	**Species Reactivity:**	Rat
Immunogen Sequence:	Purified, *E. coli*-derived, recombinant rat interleukin 1 beta (rrIL-1β)	**Format:**	Liquid 1mg/ml Solution in phosphate-buffered saline (PBS) with 5% Trehlose
Applications:	Immunohistochemistry : 0.5-5 µg/mL Western Blot: 0.1 - 0.2 µg/mL ELISA Capture: 0.2 – 0.8 µg/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-1β and for use as a capture antibody in rat IL-1β sandwich ELISAs. It will also neutralize the biological activity of rmIL-1β, but will not neutralize the biological activity of rhIL-1β, rhIL-1α or rmIL-1α. It can also be utilized for immunohistochemistry and western blotting.

Western blot
This antibody can be used at 0.1 – 0.2 µg/mL with the appropriate secondary reagents to detect rat IL-1β. The detection limit for rrIL-1β 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 rmIL-1β, rhIL-1β and rpIL-1β.

Immunohistochemistry
This antibody can be used at 0.5 - 5 µg/mL with the appropriate secondary reagents to detect rat IL-1β in cultured cells or tissue sections.

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

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**Neutralization of Rat IL-1β bioactivity -** The exact concentration of antibody required to neutralize rrIL-1β 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$_{50}$ (ND$_{50}$)** 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.

^{3}H-thymidine Incorporation in Response to rrIL-1β
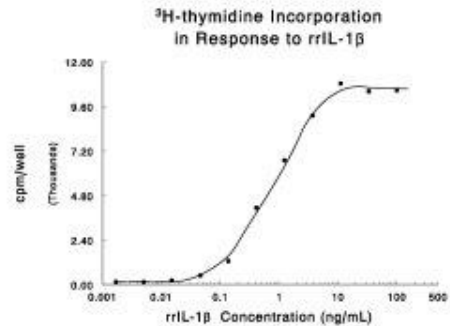
Figure 1

Figure 1: Rat IL-1β stimulates ^{3}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$_{50}$ for this effect is typically 1 - 3 ng/mL.
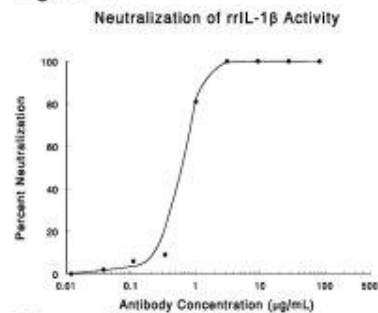
Figure 2: Approximately 0.5 - 2.0 µg/mL of the antibody will neutralize 50% of the bioactivity due to 10 ng/mL of rat IL-1β. The ND$_{50}$ for this lot of anti-rat IL-1β antibody was determined to be approximately 0.5 - 2 µg/mL in the presence of 10 ng/mL of rrIL-1β, using the murine T-helper cell line, D10.G4.1. The specific conditions are described in the figure legends.

Neutralization of rrIL-1β Activity

Figure 2

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