Anti-rat IL-1β Antibody

ORDERING INFORMATION

Catalog Number: AF-501-NA

Lot Number: YR08

Size: 100 μg

Formulation: 0.2 μm filtered solution in PBS with 5% trehalose

Storage: -20° C

Reconstitution: sterile PBS

Specificity: rat IL-1β

Immunogen: *E. coli*-derived rrIL-1β

Ig Type: goat IgG

Applications: Neutralization of bioactivity
Western blot
Immunohistochemistry
ELISA capture

Figure 1

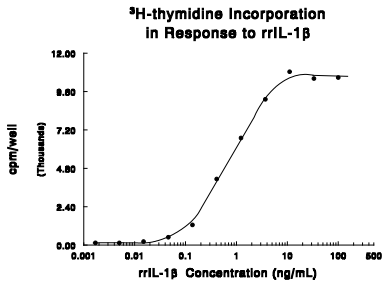
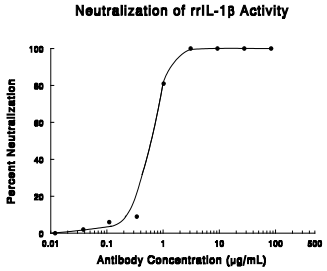


Figure 2



Preparation

Produced in goats immunized with purified, *E. coli*-derived, recombinant rat interleukin 1 beta (rrIL-1β; Val117 - Ser268; Accession # Q63264; R&D Systems, Catalog # 501-RL). IL-1β specific IgG was purified by rat IL-1β affinity chromatography.

Formulation

Lyophilized from a 0.2 μm filtered solution in phosphate-buffered saline (PBS) with 5% trehalose.

Endotoxin Level

< 0.01 EU per 1 μg of the antibody as determined by the LAL method.

Reconstitution

Reconstitute with sterile PBS. If 1 mL of PBS is used, the antibody concentration will be 0.1 mg/mL.

Storage

Lyophilized samples are stable for twelve months from date of receipt when stored at -20° C to -70° C. Upon reconstitution, the antibody can be stored at 2° - 8° C for 1 month without detectable loss of activity. Reconstituted antibody can also be aliquotted and stored frozen at -20° C to -70° C **in a manual defrost freezer** for six months without detectable loss of activity. **Avoid repeated freeze-thaw cycles.**

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.

Applications

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.

The ND$_{50}$ for this lot of anti-rat IL-1β antibody was determined to be approximately 2 - 10 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.

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 2 - 10 μg/mL of the antibody will neutralize 50% of the bioactivity due to 10 ng/mL of rat IL-1β.

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 (Cat. # BAF501) and recombinant rat IL-1β (Cat. # 501-RL) as the standard. The suggested coating concentration range is 0.2 - 0.8 μg/mL and should be titrated to determine the optimal concentration. A general protocol is provided at www.RnDSystems.com/go/MAPELISA. 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.

Optimal dilutions should be determined by each laboratory for each application.

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