Anti-Mouse IL-1 beta Antibody [PSH03-32] - BSA and Azide free (Detector)

HA721977

Product Type:	Recombinant Rabbit monoclonal IgG, primary antibodies
Species reactivity:	Mouse
Applications:	ELISA(Det)
Molecular Wt:	Predicted band size: 30.9 kDa
Clone number:	PSH03-32

Description: The Interleukin 1 (IL-1) family of proteins consists of IL-1 alpha, IL-1 beta, and the IL-1 receptor antagonist (IL-1ra). IL-1 alpha and IL-1 beta bind to the same cell surface receptors and share biological functions. IL-1 is not produced by unstimulated cells of healthy individuals with the exception of skin keratinocytes, some epithelial cells, and certain cells of the central nervous system. However, in response to inflammatory agents, infections, or microbial endotoxins, a dramatic increase in the production of IL-1 by macrophages and various other cell types is seen. IL-1 beta plays a central role in immune and inflammatory responses, bone remodeling, fever, carbohydrate metabolism, and GH/IGF-I physiology. Inappropriate or prolonged production of IL-1 has been implicated in a variety of pathological conditions including sepsis, rheumatoid arthritis, inflammatory bowel disease, acute and chronic myelogenous leukemia, insulindependent diabetes mellitus, atherosclerosis, neuronal injury, and aging-related diseases. IL-1 alpha and IL-1 beta are structurally related polypeptides that show approximately 25% homology at the amino acid (aa) level. Both are synthesized as 31 kDa precursors that are subsequently cleaved into mature proteins of approximately 17.5 kDa. Cleavage of the IL-1 beta precursor by Caspase-1/ICE is a key step in the inflammatory response. Neither IL-1 alpha nor IL-1 beta contains a typical hydrophobic signal peptide, but evidence suggests that these factors can be secreted by non-classical pathways. A portion of unprocessed IL-1 alpha can be presented on the cell membrane and may retain biological activity. The precursor form of IL-1 beta, unlike the IL-1 alpha precursor, shows little or no biological activity in comparison to the processed form. Both unprocessed and mature forms of IL-1 beta are exported from the cell.

Immunogen: Recombinant protein within Mouse IL-1 beta aa 118-269 (P10749).

Positive control: Recombinant Mouse IL-1 beta protein (HA210706).

Subcellular location: Secreted

Database links: SwissProt: P10749 Mouse

Recommended Dilutions:

ELISA(Det) Use at an assay dependent concentration. Can be paired for Sandwich ELISA with Rabbit monoclonal [PSH03-31] to Mouse IL1 beta (Capture) (HA721976) and recombinant standard Mouse IL1 beta protein (HA210706) as the standard. The reference range value is 37-3000pg/ml.

Storage Buffer: PBS (pH7.4).

Storage Instruction: Store at +4℃ after thawing. Aliquot store at -20℃. Avoid repeated freeze / thaw cycles.

Purity: Protein A affinity purified.

Images

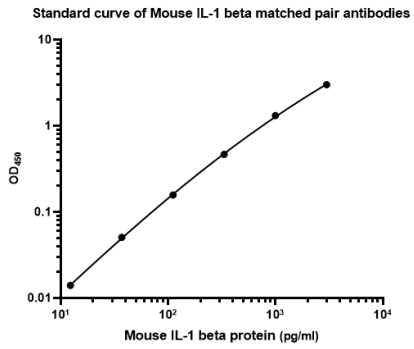

Fig1: Sandwich ELISA analysis of mouse IL-1 beta matched pair antibodies

Elisa assay was performed by coating wells of a 96-well plate with 100 µl per well of capture antibody (HA721976) diluted in carbonate/bicarbonate buffer, at a concentration of 4 µg/ml overnight at 4℃. Wells of the plate were washed, blocked with 150 µl 0.05% tween-20 1%BSA blocking buffer, and incubated with serial diluted mouse IL-1 beta protein (HA210706) starting from 3000 pg/ml to 0 pg/ml and detect antibody (HA721977)-Biotin (0.2 µg/ml) for 1 hour at 30℃ with shaking. Then the plate was washed and incubated with 100 µl per well of SA-HRP for 0.5 hour at 30℃ with shaking. Detection was performed using an Ultra TMB Substrate for 10 minutes at room temperature in the dark. The reaction was stopped with sulfuric acid and absorbances were read on a spectrophotometer at 450 nm.

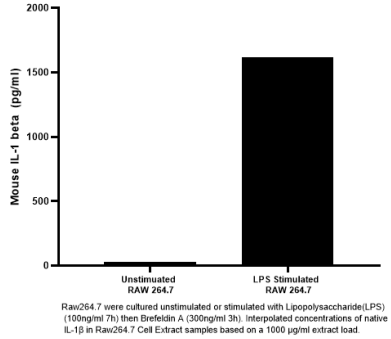

Fig2: The concentrations of IL-1β were interpolated from the IL-1β standard curve and corrected for sample dilution. The mean IL-1β concentration were determined to be 27pg/mL and 1,615 pg/mL in unstimuated and LPS stimulated Raw264.7 cell extract.

Note: All products are "FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE".

Background References

1. Brough D., Rothwell N.J. Caspase-1-dependent processing of pro-interleukin-1beta is cytosolic and precedes cell death. J. Cell Sci. 120:772-781 (2007)
2. Qu Y., Franchi L., Nunez G., Dubyak G.R. Nonclassical IL-1 beta secretion stimulated by P2X7 receptors is dependent on inflammasome activation and correlated with exosome release in murine macrophages.J. Immunol. 179:1913-1925 (2007)