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Product Data Sheet

Recombinant Human IL-1β (carrier-free)

Catalog # / Size: 579402 / 10 µg
579404 / 25 µg
579406 / 100 µg
579408 / 500 µg

Source: Human IL-1β, amino acids Ala117-Ser269 (Accession # NM_000576) was expressed in *E. coli.*

Molecular Mass: The 153 amino acid recombinant protein has a predicted molecular mass of 17,376 Da. The DTT-reduced and the non-reduced protein migrate at approximately 18kDa by SDS-PAGE. The N-terminal amino acid is Alanine.

Purity: Purity is >98%, as determined by Coomassie stained SDS-PAGE.

Endotoxin Level: Endotoxin level is <0.1 EU/µg (<0.01ng/µg) protein as determined by the LAL method.

Activity: The ED_{50} is 0.858-1.85 pg/ml, corresponding to a specific activity of 1.16-0.54 x 10^9 units/mg, as determined by the dose dependent stimulation of D10 cells proliferation.

Preparation: 10-100µg sizes are bottled at 200µg/mL, 500µg sizes and larger are bottled at the concentration indicated on the vial.

Formulation: 0.22 µm filtered protein solution is in 10mM NaH_2PO_4, 150mM NaCl, pH 7.2.

Storage: Unopened vial can be stored at 4°C for three months, at -20°C for six months, or at -70°C for one year. For maximum results, quick spin vial prior to opening. Stock solutions should be prepared at no less than 10µg/mL in buffer containing carrier protein such as 1% BSA or HSA or 10% FBS. For long term storage, aliquot into polypropylene vials and store in a manual defrost freezer. **Avoid repeated freeze/thaw cycles.**

Applications:

Applications: Bioassay

Recommended Usage: Use when high specific biological activity is required.

Application Notes: This IL-1β protein is biologically active, and can be used for in vitro assays

Description: IL-1β in humans and mice does not encode a typical signal peptide and, as a result, newly synthesized pro-IL-1β accumulates within the cytoplasm of activated monocytes and macrophages (1). Conversion of the inactive pro-IL-1β to its mature form requires the proteolytic action of IL-1β-converting enzyme (ICE), also termed caspase-1 (2). Secretion of mature IL-1β from LPS-activated monocytes/macrophages is not a constitutive process. These cells must encounter a secondary stimulus that specifically activates the posttranslational processing events (2). Moreover, owing to its pro-inflammatory nature, IL-1β is regarded as a tumor-promoting cytokine. In fact, enhanced tumor metastasis and angiogenesis has been observed under the influence of IL-1β (3). IL-1β is able to facilitate tumor progression in murine models of lung cancer. In addition, upregulation of metastasis and tumor angiogenesis by IL-1β has been associated with increased activity of matrix metalloproteinases and expression of the pro-angiogenic molecule hepatocyte growth factor (4).

Antigen References:
1. Stevenson FT, *et al. J Cell Physiol* 152:223-231 1992.
2. Shi J, *et al. J. Immunol.* 179:1245-1253 2007.
3. Dinarello CA *Cancer Metastasis Rev* 25:307-313 2006.
4. Boost KM, *et al. BMC Cancer* 8:265 2008.

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