

# Human IL-1 $\beta$ ELISpot Kit

## PRODUCT SPECIFICATIONS

|                       |                                                                                                                                                                  |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Catalogue N°</b>   | 856.101.001PC - 1 x 96 Discovery (pre-coated plate)<br>856.101.002PC - 2 x 96 (pre-coated plates)<br>856.101.005PC - 5 x 96 (pre-coated plates)                  |
| <b>Target species</b> | Human                                                                                                                                                            |
| <b>Specificity</b>    | Recognizes natural (pro and mature) human IL-1b                                                                                                                  |
| <b>Incubation</b>     | 3h after cell stimulation                                                                                                                                        |
| <b>Cross Reaction</b> | No cross reactivity with other human cytokines                                                                                                                   |
| <b>Kit Content</b>    | Diaclone Pre-coated ELISpot kits include precoated PVDF plates, Detection antibody, Alkaline phosphatase conjugate, BSA, BCIP/NBT ready-to-use substrate buffer. |
| <b>Synonym</b>        | IL-1b<br>IL-1beta                                                                                                                                                |

### BACKGROUND

Interleukin-1 Beta (IL-1b) is a member of the interleukin-1 family. This family contains three structurally related polypeptides. The first two are IL-1a and IL-1b, each of which has a broad spectrum of both beneficial and harmful biologic actions, and the third is IL-1-receptor antagonist, which inhibits the activities of interleukin-1.

IL-1a and b present approximately 25% homology at the amino acid level, but the difference is in their tri dimensional structure. Two distinct receptor types have been isolated, that bind both forms. IL-1b is synthesized as a large precursor, with a molecular weight of 31 kDa. The molecular weight of the mature form is 17.5 kDa. Unlike IL-1a, the IL-1b precursor shows little or no biological activity in comparison to the mature form.

IL-1 is primarily an inflammatory cytokine. It belongs to a group of cytokines with overlapping biologic properties (TNF $\alpha$  and IL-6). IL-1, TNF and IL-6 share the ability to stimulate T and B lymphocytes, increase cell proliferation, and initiate or suppress gene expression for several proteins exerting their effects by binding to specific receptors.

IL-1 (a and b) have similar biological properties, among them, the ability to induce fever, sleep, anorexia and hypotension. IL-1 stimulates the release of pituitary hormones, increases the synthesis of collagenases, resulting in the destruction of cartilage, and stimulates the production of prostaglandins, leading to decrease in the pain threshold. In addition, IL-1 has some host defence properties. However, whereas IL-1b is a secreted cytokine, IL-1a is predominantly a cell-associated cytokine. IL-1 has also been implicated in the destruction of beta cells of the islets of Langerhans, the growth of myelogenous leukaemia cells, and the development of atherosclerotic plaques. It is described in several diseases: sepsis syndrome, rheumatoid arthritis, inflammatory Bowel disease, acute and chronic myelogenous leukaemia, insulin dependent diabetes mellitus and atherosclerosis.

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