Biology and Disease

Interleukin-1 alpha and beta (IL-1α and IL-1β) are pro-inflammatory cytokines involved in immune defense against infection, and are part of the IL-1 superfamily of cytokines. Both IL-1α and IL-1β are produced by macrophages, monocytes and dendritic cells.

IL-1 is involved in various immune responses with a primary role in inflammation, making it a target for Rheumatoid Arthritis (RA). IL-1α and IL-1β are produced as precursor peptides, which are proteolytically processed and released in response to cell injury, and thus induce apoptosis. IL-1β production in peripheral tissue has also been associated with hyperalgesia (increased sensitivity to pain) associated with fever.
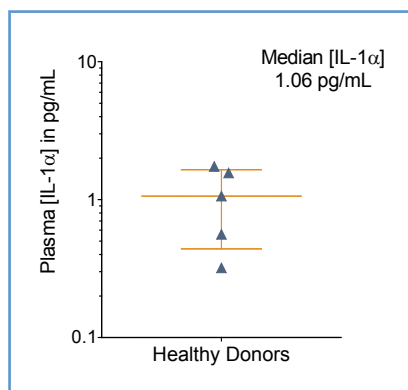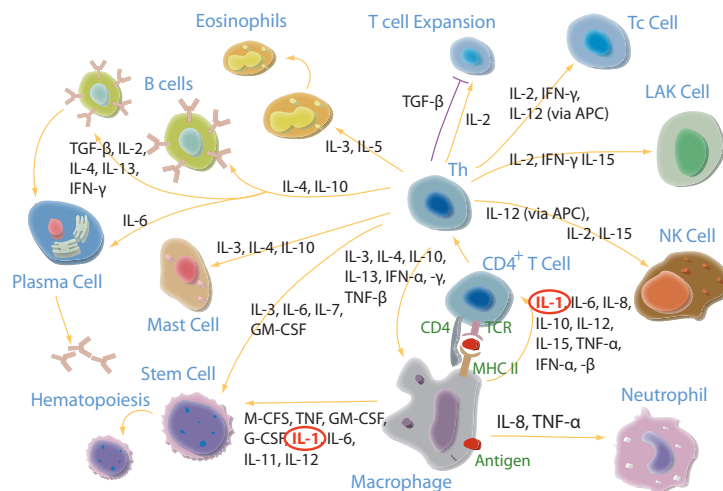
FIGURE 1: [IL-1α] in EDTA plasma from 10 healthy donors (5 samples < LLoQ), with median and interquartile range.

The Erenna® IL-1α Immunoassay Kit can quantify IL-1α in EDTA plasma from healthy subjects, who have a median [IL-1α] of 1.06 pg/mL that is above the detection limit of 0.25 pg/mL.
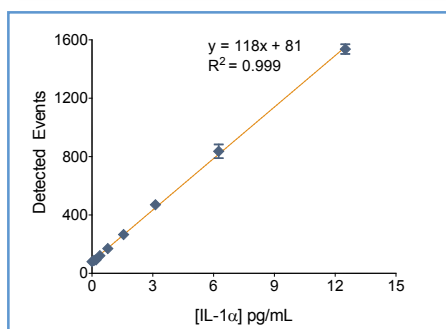
$$y = 118x + 81$$
$$R^2 = 0.999$$

FIGURE 2: The Erenna® IL-1α Immunoassay Kit low-end standard curve.

$$y = 1.03x - 0.39$$
$$R^2 = 0.999$$
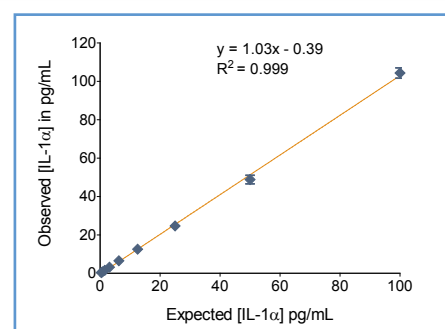
FIGURE 3: The Erenna® IL-1α Immunoassay Kit correlation curve.

TABLE 1: Analytical sensitivity of the Erenna® IL-1α Immunoassay Kit[1]

Lower Limit of Detection	0.25 pg/mL
Lower Limit of Quantification[2]	0.39 pg/mL
Upper Limit of Quantification	100 pg/mL
Low-end CV% Range	2 - 19%
Low-end CV% Average	7%
Recommended Sample Volume	100 µL
Minimum Sample Volume Required[3]	50 µL
Matrices Validated	human EDTA plasma

[1] see product insert for updated values
[2] LLoQ ≤ 20% CV and ± 20% recovery
[3] based upon median [IL-1α] in a healthy reference population
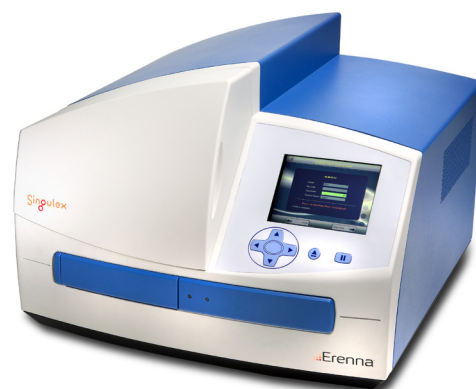
Representative data shown for demonstration purposes only. Individual results may vary depending upon samples tested and protocol used.