

IL-6 (Interleukin 6)

A Key Biomarker for Inflammation



Applications

A key inflammatory mediator - Interleukin 6 (IL-6)

- A multifunctional cytokine
- Produced by lymphoid and nonlymphoid cells in response to tissue damage and infections
- Trigger the acute phase response on various target cells^[1]

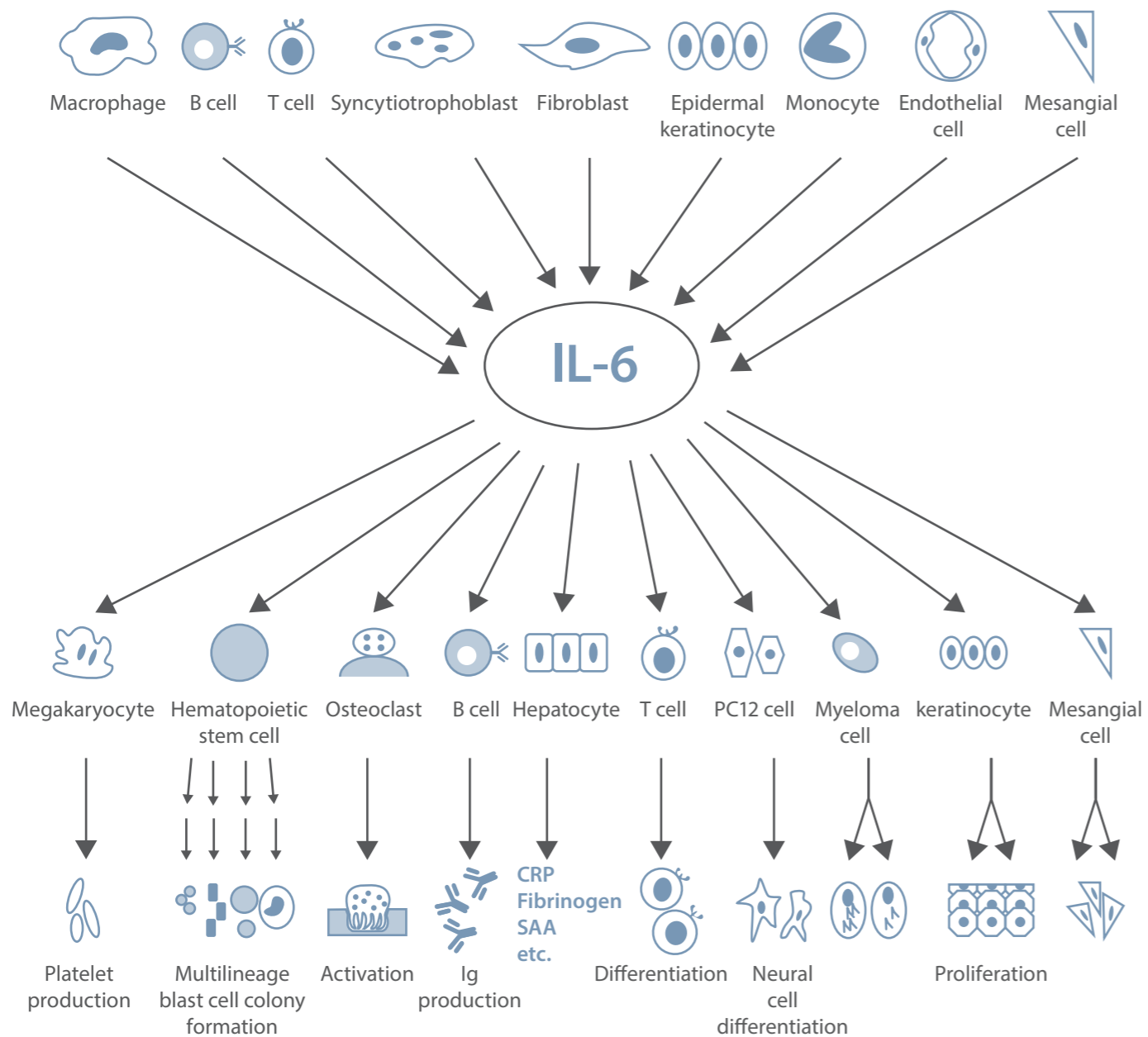


Fig. Biological activities of IL-6 ^[2]

Clinical significance of IL-6

The Role of IL-6

Infection

- Monitor the infection after surgery
- Identify Gram-N and Gram-P bacteria
- Reduce the PCT false negative rate in CAP

Sepsis

- To diagnose sepsis in adults and neonates
- Prognostic assessment in sepsis

COVID-19

- Positively correlated with the severity of COVID19 disease

Other disease

- Tumors
- SLE
- Enteritis cardiovascular disease
- Rheumatoid arthritis (RA)

Diagnosis of bacterial infection

IL-6 levels in the bacterial infection group were significantly higher than those in the non-bacterial infection and healthy groups.

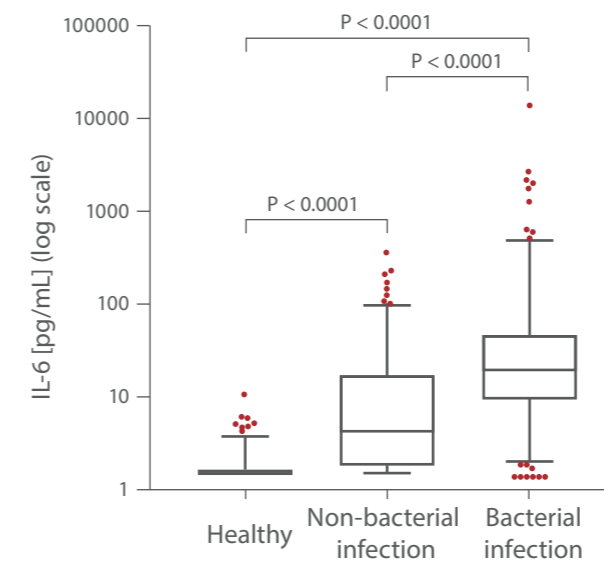


Fig. Distribution of IL-6 in healthy individuals (n=118), patients with non-bacterial infection disease (n=163) and patients with bacterial infection disease (n=188)

Assessment of sepsis severity

IL-6 concentration distribution showed a statistically significant difference between sepsis and septic shock.

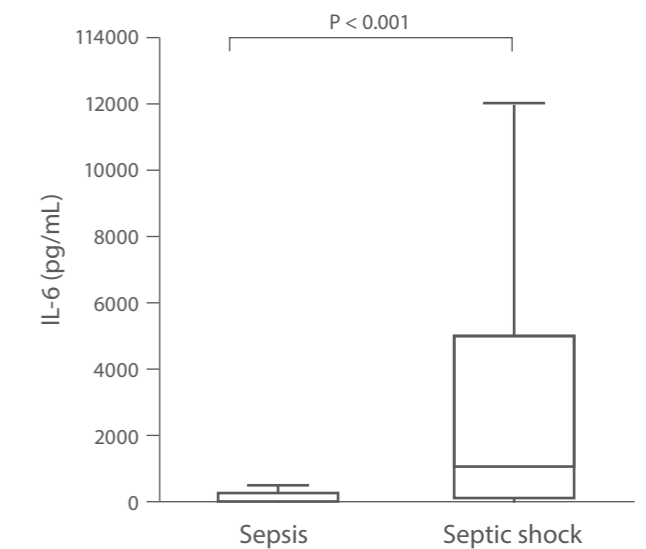


Fig. IL-6 levels in patients with different pathological conditions: sepsis (n=71) and septic shock (n=49).

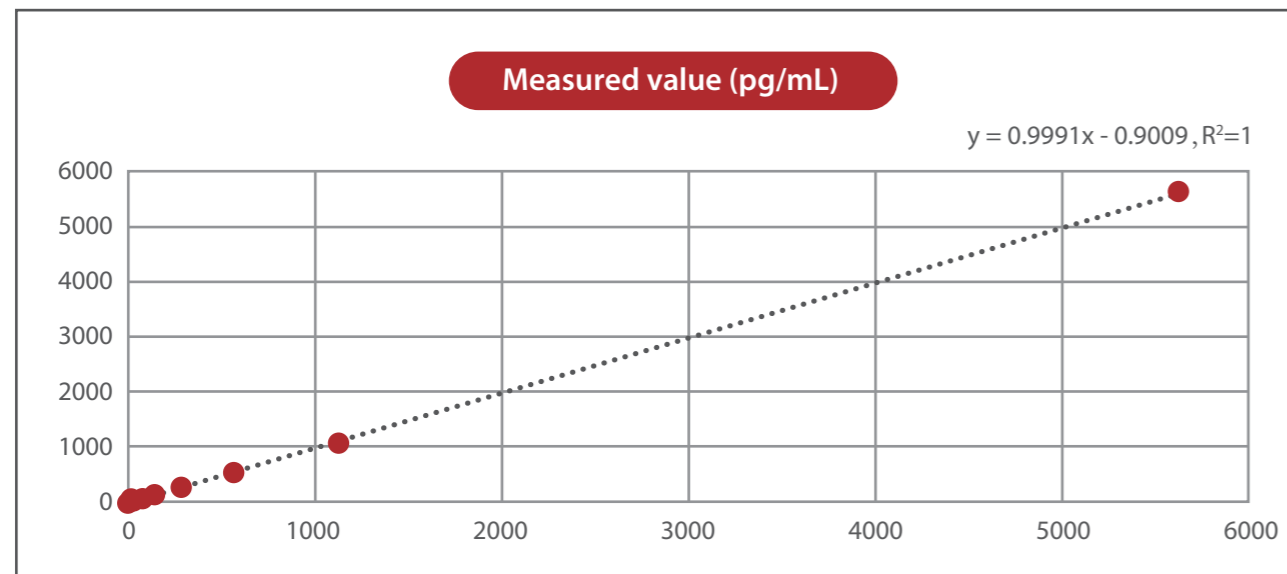
Performance

Performance of Mindray IL-6

Precision

Sample	Mean (pg/mL)	Within-run Precision	Total Precision
		CV(%)	CV(%)
QC-L	42.18	1.78%	1.80%
QC-H	259.00	1.98%	2.00%
Sample1	49.28	1.72%	1.73%
Sample 2	439.99	1.66%	1.67%

Linearity



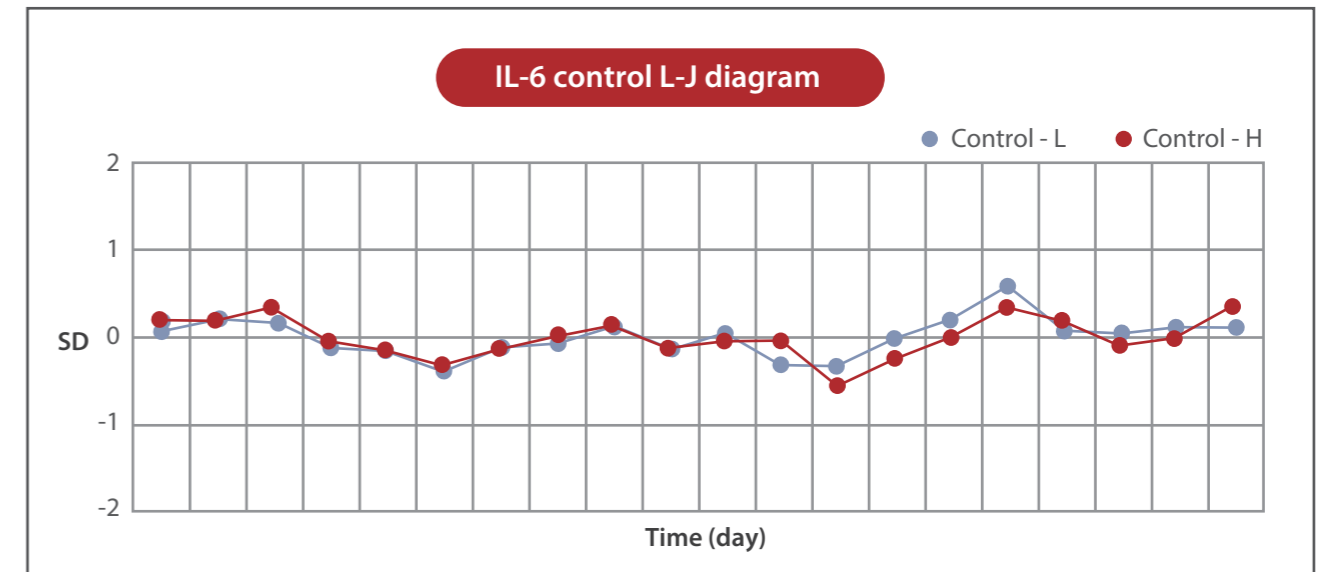
Accuracy

Sample	Defined Value (pg/mL)	Measured Value (pg/mL)	Relative Deviation
Accuracy control 1	44.07	42.68	3.26%
Accuracy control 2	265.92	264.67	0.47%

Endogenous interferences

Substance	Concentration
Hemoglobin	1000 mg/dL
Bilirubin	40 mg/dL
Triglyceride	1500 mg/dL
Biotin	1200 ng/mL
Alkaline Phosphatase (ALP)	1500 U/mL

Stability



Threshold value and clinical significance

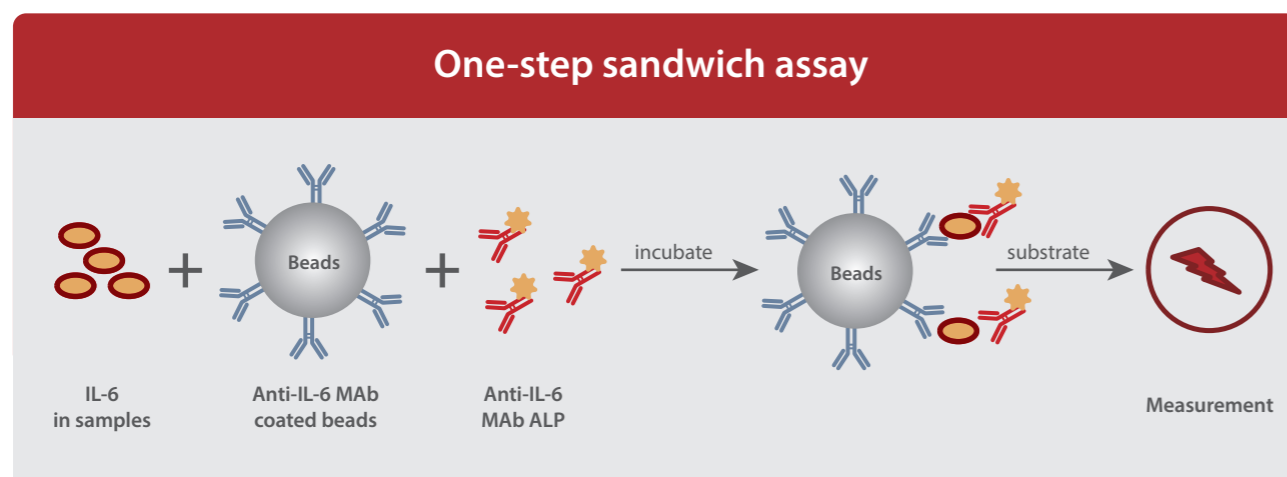
IL-6 (pg/mL)	Interpretation of Results
<7 pg/mL	Normal values for healthy individuals
≥7 pg/mL	Possible bacterial infection

Product Information

Specifications of Mindray IL-6

Item	Description
Package	2×50 test/kit, 2×100 tests/kit
Detection principle (CLIA)	Sandwich
Time to first result	16min
Lower limits of measurement	LoB=1.0 pg/mL, LoD=1.5 pg/mL, LoQ=2.5 pg/mL
Reference interval	7 pg/mL
Linearity	1.5-5000 pg/mL
Dilution Ratio	1:40 or 1:10
Within-run Precision	≤5%
Total imprecision	≤8%
High Dose Hook	200,000 pg/mL
Hemoglobin	1000 mg/dl
Bilirubin	40 mg/dl
Triglyceride	1500 mg/dl
Biotin	1200 ng/mL
Alkaline Phosphatase (ALP)	1500 U/mL

Detection principle (CLIA) of Mindray IL-6



Ordering information

Product Name	Package	P/N	REF
IL-6 (CLIA)	2×50 tests/kit	105-027046-A0	105-027046-00
	2×100 tests/kit	105-027047-A0	105-027047-00
IL-6 Calibrator	C0: 4×0.35 mL	105-027173-A0	105-027173-00
	C1: 4×0.30 mL		
	C2: 4×0.30 mL		
IL-6 Control	L: 3×0.5 mL	105-027180-A0	105-027180-00
	H: 3×0.5 mL	105-027181-A0	105-027181-00
	L: 6×0.5 mL	105-027182-A0	105-027182-00
	H: 6×0.5 mL	105-027183-A0	105-027183-00



References

- [1] Tanaka, T., Narazaki, M., and Kishimoto, T. (2014). IL-6 in inflammation, immunity, and disease. *Cold Spring Harb. Perspect. Biol.* 6:a016295. doi: 10.1101/cshperspect.a016295
- [2] Tetsuji Naka 1, Norihiro Nishimoto, Tadamitsu Kishimoto. The paradigm of IL-6: from basic science to medicine. *Arthritis Res.* 2002;4 Suppl 3(Suppl 3):S233-42. doi: 10.1186/ar565. Epub 2002 May 9.