

Cytokine Testing

Test Code Plasma/Serum/Other	Test Name	Sensitivity (pg/mL)
1225 / 1215 / 1411	Interleukin- 1 β (IL-1 β)	0.6
1226 / 1216 / 1412	Interleukin- 2 (IL-2)	0.8
1227 / 1217 / 1413	Interleukin- 4 (IL-4)	1.4
1228 / 1218 / 1414	Interleukin- 5 (IL-5)	0.6
1258 / 1257 / 1415	Interleukin- 6 (IL-6)	7.1
1229 / 1219 / 1416	Interleukin- 8 (IL-8)	2.3
1222 / 1212 / 1417	Interleukin- 10 (IL-10)	0.5
1223 / 1213 / 1421	Interleukin- 12 (IL-12p70)	9.8
1224 / 1214 / 1422	Interleukin- 13 (IL-13)	10.6
1221 / 1271 / 1418	Interferon-gamma (IFN- γ)	0.1
1230 / 1220 / 1419	TNF-alpha (TNF- α)	0.5
1256 / 1255 / 1420	GM-CSF	3.0

CPT Code: 83520 for each cytokine

Specimen Requirement:

- 1 mL plasma (EDTA plasma) or serum.
- **The matrix (i.e. serum or plasma) must be specified on the test requisition form.**
- Specimens should be frozen (-70° C) and shipped via overnight courier with dry ice.

Background:

Cytokines have emerged as molecules of importance in the regulation of many immunologic processes in the cell⁽¹⁻⁴⁾. The ability to accurately measure quantitative and qualitative differences in cytokine production is becoming increasingly important to the understanding of normal and pathological processes.

As the use of cytokine and anticytokine therapies, as well as other immunotherapy treatments increase, monitoring cytokine levels in clinical specimens will become more important. However, the clinical significance of such measurements for individual patients has not been established. None of the cytokine tests have been cleared by FDA for in vitro diagnostic use and their primary application is for research.

Units and Normal Reference Range:

When available a serum/plasma reference value will be provided with the report. However, it should be noted that these ranges are obtained from a limited population of apparently healthy adults and are not diagnostic thresholds. No reference ranges are provided for other (non-serum, non-plasma) specimens.

Method:

1. Multiplex array format with the Meso Scale Discovery Sector Imager 2400.
2. MSD cytokine assays measure from one to ten cytokines in a 96-well MULTI- SPOT plate.
3. The assay employs a sandwich immunoassay format.
4. MSD technology uses electrochemiluminescence detection; a CCD camera allows for the quantification of light emitted from each spot in each well.
5. MSD software generates a standard curve to determine sample cytokine concentrations.

Availability of Cytokine Panels. The following panels are available:

- #403025 **Th1/Th2 Panel (serum)**
IFN γ , IL-2, IL-4, IL-5, IL-10, IL-12 p70, IL-13
- #403027 **Pro-Inflammatory Panel (serum)**
IL-1 β , TNF- α , IL-6, IL-8
- #403026 **Th1/Th2 Panel (plasma)**
IFN γ , IL-2, IL-4, IL-5, IL-10, IL-12 p70, IL-13
- #403028 **Pro-Inflammatory Panel (plasma)**
IL-1 β , TNF- α , IL-6, IL-8

Other cytokine tests may be available, please call for more information. In addition, the tests can be ordered individually.

References:

1. Chung KF Cytokines: An overview in New Drugs for Asthma, Allergy and COPD, Prog Respir Res. 2001, vol 31: 242-246.
2. MSD 96-Well MULTI-ARRAY and MULTI-SPOT Human Cytokine Assays: Ultra Sensitive Kit package insert. Meso Scale Discovery
3. Bienvenu JA et al. Cytokine assays in human sera and tissues. Toxicology 1998; 129: 55-61.
4. Debad, J.D., Glezer, E.N., Wohlstader, J.N., Sigal, G.B. (2004) Clinical and Biological Applications of ECL. In Electrogenenerated Chemiluminescence, ed. A.J. Bard. Marcel Dekker, New York, pp. 43-78.

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