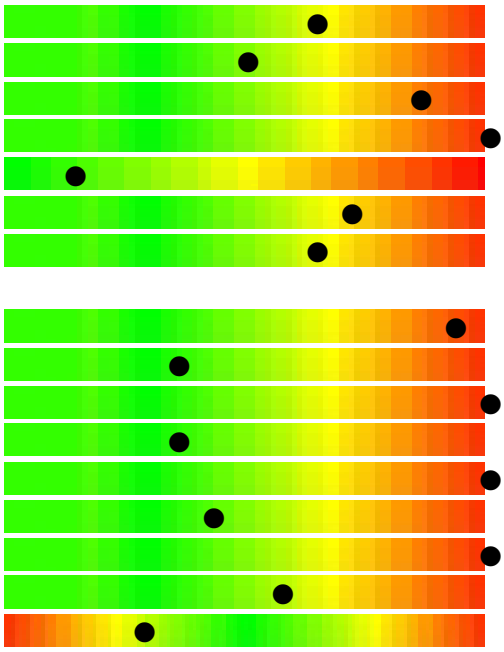
NutriPATH
Integrative Pathology Services
P: 1300 688 522
E: info@nutripath.com.au
A: PO Box 442 Ashburton VIC 3142

TEST PATIENT
Sample Test Name
Sex : F
Date Collected : 00-00-0000
111 TEST ROAD TEST SUBURB
LAB ID: 00000000 UR#:0000000

TEST PHYSICIAN
DR JOHN DOE
111 CLINIC STREET
CLINIC SUBURB VIC 3000

INTEGRATIVE MEDICINE

BLOOD - SERUM	Result	Range	Units
CYTOKINES,Extensive Panel			
ProInflammatory Cytokines (TH1)			
Interleukin 1	**2.1**	0.0 - 2.8	pg/mL
Interleukin 6	**5.3**	0.0 - 11.0	pg/mL
Interleukin 7	***17.8* *H**	0.0 - 16.0	pg/mL
Interleukin 8	***713.1* *H**	0.0 - 28.0	pg/mL
Interleukin 17	**7.2**	< 13.0	pg/mL
TNFa	**11.70**	0.00 - 13.00	pg/mL
TNFb	**113.0**	0.0 - 156.0	pg/mL
AntiInflammatory Cytokines (TH2)			
GM-CSF	***97.3* *H**	0.0 - 80.0	pg/mL
Interleukin 2	**2.3**	0.0 - 10.0	pg/mL
Interleukin 4	***65.7* *H**	0.0 - 19.0	pg/mL
Interleukin 5	**3.1**	0.0 - 13.0	pg/mL
Interleukin 10	***18.8* *H**	0.0 - 7.0	pg/mL
Interleukin 12	**5.7**	0.0 - 14.0	pg/mL
Interleukin 13	***29.2* *H**	0.0 - 6.0	pg/mL
INFg	**16.2**	0.0 - 28.0	pg/mL
TGFb	**33.5**	28.0 - 64.0	pg/mL



(*) Result outside normal reference range (H) Result is above upper limit of reference rang

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Cytokines Comment

GMCSF COMMENT:
GM-CSF Granulocyte-Macrophage Colony-Stimulating Factor (GM-CSF) is a cytokine that stimulates the growth and differentiation of hematopoietic precursor cells from various lineages including granulocytes, macrophages, eosinophils and erythrocytes.

INTERLEUKIN 7 COMMENT:
IL-7 Interleukin-7 (IL-7) stimulates the proliferation of pre-B and pro-B-cells without affecting their differentiation. It also selectively supports the maturation of megakaryocytes. In human peripheral monocytes, IL-7 induces the synthesis of some inflammatory mediators such as IL-1 and IL-6. It also enhances the expression and secretion of IL-3 and GM-CSF in activated human T-cells. IL-7 down-regulates expression of TGF-beta in macrophages which has been suggested as an inhibitor of the antitumor immune response.

INTERLEUKIN 8 COMMENT:
IL-8 Interleukin-8 (IL-8) is a chemokine produced by macrophages that attracts neutrophils, basophils, and T-cells, but not monocytes. It may be of clinical relevance in psoriasis and rheumatoid arthritis. Elevated concentrations are observed in psoriatic scales which may explain the high proliferation rate observed in these cells. It may also be a marker of different inflammatory processes and probably plays a role in the pathogenesis of chronic polyarthritis since excessive amounts of this factor are found in synovial fluids.

INTERFERON gamma COMMENT:
INFg - Produced by Th1, Tc and NK cells. They target the macrophages, activated B cells and Th2 cells.
The function is MHC expression, Ig class switch to IgG, proliferation and pathogen elimination.

INTERLEUKIN 4 COMMENT:
IL4 is produced mainly by a subpopulation of activated T-cells (Th2) which are the biologically most active helper cells for B-cells and which also secrete IL5 and IL6 .
Another subpopulation (Th1) also produces IL4 albeit to a lesser extent.
Non-T/Non-B-cells of the mast cell lineage also produce IL4.
IL4 promotes the proliferation and differentiation of activated B-cells, the expression of class II MHC antigens, and of low affinity IgE receptors in resting B-cells. IL4 is probably an autocrine growth modulator for Hodgkin's lymphomas.
IL4 enhances expression of class II MHC antigens on B-cells. It can promote their capacity to respond to other B-cell stimuli and to present antigens for T-cells. This may be one way to promote the clonal expansion of specific B-cells and the immune system may thus be able to respond to very low concentrations of antigens. The production of IL4 by Non-B Non-T-cells is stimulated if these cells interact with other cells via their Fc receptors for IgE or IgG. This effect can be enhanced by IL3 .
IL2 and PAF (platelet activating factor) induce the synthesis of IL4 while TGF-beta inhibits it.
IL4 inhibits cell activation of NK-cells induced by IL2 . IL4 stimulates the proliferation of thymocytes with the marker spectrum CD4 (-)CD8 (-),CD4 (+)CD8 (-),CD4 (-)CD8 (+).In CD4 (+)cells IL4 induces the expression of CD8 .
In activated B-cells IL4 stimulates the synthesis of IgG1 and IgE and inhibits the synthesis of IgM, IgG3, IgG2a and IgG2b. This Isotype switching induced by IL4 in B-cells is antagonized by IFN-gamma . The growth of multiple myelomas can be suppressed by IL4 which inhibits the synthesis of IL6 , a myeloma growth factor . IL4 also inhibits the synthesis of IL6 in human alveolar macrophag
INTERLEUKIN 10 COMMENT:

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IL-10 - Produced by Th2 cells, they target macrophages and B cells. Their function is cytokine production and activation.
An Anti-inflammatory cytokine which decreases with age.

INTERLEUKIN 13 COMMENT:
IL13 - Inhibits cytokine production. Synergises with IL2 in regulating Interferon-gamma synthesis.
May be critical in regulating inflammatory and immune responses.

Tests ordered: CYTOK,CFee