



## Cytokine Response Profile

### Enables Practitioners to Assess Systemic Immune Status

- ▶ *Pro-Inflammatory / Anti-Inflammatory Cytokine Balance*
- ▶ *Th1, Th2, Th17, and T-Regulatory Cytokine Responses*
- ▶ *Efficacy of Immune Balancing and Modulating Approaches*

Alterations in the immune system that result in chronic inflammation and autoimmunity have been linked to a wide range of health conditions and diseases. Cytokines are important mediators of many immune responses, and imbalances in cytokines have been shown to play key roles in chronic inflammation and autoimmunity.

Most cytokines can be generally characterized as pro-inflammatory or anti-inflammatory, depending on their primary effects on immune responses. Immune responses are often further characterized by the type of T helper (Th) cell involved.

CytoDx Analytes			
	PRO-INFLAMMATORY		ANTI-INFLAMMATORY
GM-CSF	IL-7	TNF alpha	IL-4 : Th2
IFN gamma : Th1	IL-8	IL-15	IL-5 : Th2
IL-1 beta	IL-12 p70 : Th1	MIP-1 beta (CCL4)	IL-10 : Treg
IL-2 : Th1	IL-17A : Th17	RANTES	IL-13 : Th2
IL-6	IL-18		

### Gut-Immune Connection

It is now widely recognized that the gut — *and especially the gut microbiome* — plays a critical role in regulating immune function, and has been shown to affect circulating cytokines such as IL-6, TNF-alfa, and IL-17.



RESEARCH. TECHNOLOGY. RESULTS.

Connect with Us!



# Empowering New Clinical Insights

Once again, Diagnostic Solutions Laboratory is on the forefront of laboratory science, bringing clinicians the latest revolutionary clinical assessment tool, CytoDx®.

With an assessment of 18 cytokines, CytoDx provides clinicians with powerful insight into their patient's systemic immune regulatory function, allowing for advanced health assessment and individualized treatment plans based on specific immune responses.

CytoDx Analytes				
IMMUNE RESPONSE TYPE	Th1 / Th17	Th2	REGULATORY & IMMUNE MAINTENANCE	INNATE IMMUNE RESPONSE
<b>CYTOKINES INVOLVED</b>	<ul style="list-style-type: none"> <li>• IFN gamma</li> <li>• IL-2</li> <li>• IL-12 p70</li> <li>• IL-17A</li> <li>• TNF alpha</li> <li>• GM-CSF</li> </ul>	<ul style="list-style-type: none"> <li>• IL-4</li> <li>• IL-5</li> <li>• IL-13</li> </ul>	<ul style="list-style-type: none"> <li>• IL-7</li> <li>• IL-10</li> </ul>	<ul style="list-style-type: none"> <li>• IL-1 beta</li> <li>• IL-6</li> <li>• TNF-alpha</li> <li>• IL-8</li> <li>• IL-15</li> <li>• IL-18</li> <li>• MIP-1 beta (CCL4)</li> <li>• RANTES</li> <li>• GM-CSF</li> </ul>
<b>NORMAL ROLES</b>	<ul style="list-style-type: none"> <li>• Eliminate certain pathogenic bacteria, viruses and other microorganisms</li> </ul>	<ul style="list-style-type: none"> <li>• Promote antibody production by B cells</li> <li>• Eliminate extracellular parasites</li> </ul>	<ul style="list-style-type: none"> <li>• Limit inflammatory responses</li> <li>• Promote immune-tolerance</li> </ul>	<ul style="list-style-type: none"> <li>• Eliminate pathogens, promote mucosal barrier defense, promote adaptive immune response</li> </ul>
<b>CONDITIONS ASSOCIATED WITH IMBALANCES</b>	<ul style="list-style-type: none"> <li>• Hashimoto's Thyroiditis</li> <li>• Rheumatoid Arthritis</li> <li>• Multiple Sclerosis</li> <li>• Psoriasis</li> <li>• Crohn's Disease</li> <li>• Celiac Disease</li> <li>• Atherosclerosis</li> <li>• Type 1 Diabetes</li> </ul>	<ul style="list-style-type: none"> <li>• Food Allergies</li> <li>• Seasonal Allergies</li> <li>• Asthma</li> <li>• Atopic Dermatitis</li> <li>• Eczema</li> <li>• Chemical Sensitivities</li> <li>• Chronic Fatigue Syndrome</li> </ul>	<ul style="list-style-type: none"> <li>• Autoimmune Diseases</li> <li>• Inflammatory Bowel Disease</li> </ul>	<ul style="list-style-type: none"> <li>• Wide range of inflammatory and autoimmune conditions</li> </ul>

## SPECIMEN REQUIREMENTS

Single serum collection shipped frozen.  
Freeze overnight (8-hour minimum). Dry ice required for transport.

## GETTING STARTED

Account setup forms are available on our website, via email at [cs@diagnosticsolutionslab.com](mailto:cs@diagnosticsolutionslab.com), or by phone at 877-485-5336.

## COLLECTION KIT CONTENTS

Test kits include specimen collection instructions, test request form, SST tube, specimen bag, and a prepaid mailer (US). Dry ice not provided.



RESEARCH. TECHNOLOGY. RESULTS.

[www.diagnosticsolutionslab.com](http://www.diagnosticsolutionslab.com) • 877.485.5336