



10-19-2018 16:24 11-30-2015 Final Report Date: Specimen Collected:

1512010000 12-01-2015 00:00 Accession ID: Specimen Received:

LAST NAME FIRST NAME MIDDLE NAME GENDER DATE OF BIRTH ACCESSION ID

TESTNAME PATIENT MALE 1996-10-22 1512010000

PATIENT

Name: PATIENT TESTNAME Date of Birth: 1996-10-22 Gender: Male Age: 22

Telephone #: 000-001-0002

Street Address: 1021 HOWARD AVENUE SUITE B

City: San Carlos State: CA Zip #: 94070

Fasting: FASTING No. of hours: 12.0

PROVIDER

Practice Name: Test Client, MD

Provider Name: Internal2 Test Client2, MD (999999) Phlebotomist:

Street Address: 999999 PRACTICE STREET AVE

City: SAN CARLOS State: CA

Zip #: 94404 Telephone #: 666-666-6662

Fax #: 111-222-0000

For doctor's reference

Vibrant Wellness is pleased to present to you the Soy Zoomer, in order to help you make healthy lifestyle and dietary choices in consultation with your healthcare provider. It is intended to be used as a tool to encourage a general state of health a nd well-being.

The Vibrant Soy Zoomer is an array of soy antigens which offers very specific antibody-to-antigen recognition. The panel is designed to assess an individual's IgG and IgA sensitivity to these antigens at the peptide level. Additionally soy allergy testing is also performed by checking for IgE antibodies against soybean.

Interpretation of Report: The summary score provided for Soy Zoomer is a unified score calculated from the IgE, IgA and IgG reactivity of the individual to the respective antigens with higher weightage for IgE than IgA than IgG. Weightage is also assigned to the antigens based on its importance and abundance in the specific food that is tested. In the detailed report, the test results of antibody levels to the individual proteins are calculated by comparing the average intensity of the individual protein antibody to that of a healthy reference population. Reference ranges have been established using 192 healthy individuals. The results are displayed as Positive, Moderate or Negative. A Positive result indicates that you have an increased reactivity to the antigen with respect to the reference range. A Moderate sensitive result indicates that you have a moderate reactivity to the food antigen with respect to the reference range. A Negative or no sensitivity result indicates that you have a low reactivity to the food antigen with respect to the reference range. Vibrant utilizes proprietary fluorescent analysis which is designed to assay specific total IgG (subclasses 1, 2, 3, 4) and total IgA (subclasses 1, 2) antibodies. The classification of Positive to Moderate to Negative denotes the level of antibody reactivity detected through this analysis.

The Vibrant Wellness platform provides tools for you to track and analyze your general wellness profile. Testing for Soy Zoomer panel is performed by Vibrant America, a CLIA certified lab CLIA#:05D2078809. Vibrant Wellness provides and ma kes available this report and any related services pursuant to the Terms of Use Agreement (the "Terms") on its website at www.vibrant-wellness.com. By accessing, browsing, or otherwise using the report or website or any services, you ack nowledge that you have read, understood, and agree to be bound by these terms. If you do not agree to accept these terms, you shall not access, browse, or use the report or website. The statements in this report have not been evaluated by the Food a nd Drug Administration and are only meant to be lifestyle choices for potential risk mitigation. Please consult your physician/ dietitian for medication, treatment, or lifestyle management. This product is not intended to diagnose, treat, or cure any disease.

Please Note - It is important that you discuss any modifications to your diet, exercise and nutritional supplementation with your physician before making any changes. To schedule an appointment with Vibrant Clinical Dietitians please call: Toll-Free 866-364-0963.



INTRODUCTION

Soy is one of the few plant foods with all the amino acids your body needs to make proteins. Soy is also considered a major crop that may induce food sensitivity in certain individuals and is in the list of eight most significant food allergens. Soya protein consists of 136 phytochemicals and at least 16 antigenic proteins that have been characterized. The major soy antigens include Gly m 1 (soybean hydrophobic protein), Gly m 2 (defensin), Gly m 3 (profilin), Gly m 4 (PR-10 protein), Gly m 5 (β -conglycinin, 7S globulin), and Gly m 6 (glycinin, 11S globulin). Soy sensitivity is most prevalent in children, and reactions may be systemic or more common to the skin, gastrointestinal, and respiratory tracts.

Soy sensitivity may become a complex health concern as soybean is a major oilseed crop that is often incorporated into products such as beverages, processed foods, and pharmaceuticals. Soy sensitive individuals must avoid all soy products to prevent a food sensitivity reaction. Diagnosis of soy sensitivity is difficult because normal skin or blood tests can not differentiate from other sensitivities such as peanut. Having a reliable test to achieve early diagnosis and intervention is extremely important, especially for children. There is a high rate of soy sensitive children outgrowing their sensitivity if properly diagnosed and cared for.

While food allergy is an immediate IgE-mediated immune response, food sensitivity is usually a delayed IgG-mediated immune response that is frequently overlooked or misdiagnosed. Detection of IgG and IgA antibodies to soy antigens can be predictive of improved nutritional intake from alternative foods (in consultation with a dietitian) and reduce the risk of soy sensitivity developing into more serious health problems. Because soy sensitive individuals may have concomitant sensitivity to peanut or nuts, consider running the Peanut Zoomer panel and the Nut Zoomer panel for the most comprehensive testing.







Soy IgE In Moderate High Risk In Moderate High Risk **Control Test name Previous** Control Range Range Range 0.7 Soy IgE (kU/L) 2.0 ≤2.0 2.1~4.0 ≥4.1 08/20/2015

Positive		Moderate		Nagativa				
IgG	lgA	lgG	lgA	Negative				
		Soy Gly m 2	Soy Gly m 4 Gly m 7 Cry1Ac GMO	Soy Gly m 1 Gly m 3 Gly m 5 Gly m 6 Kunitz Soybean Gly m 8 Gly m Bd 30k Trypsin				
			protein	Gly m 8 Gly m Bd 30k Trypsin Inhibitor				



LIFESTYLE CONSIDERATIONS



Avoid Soy

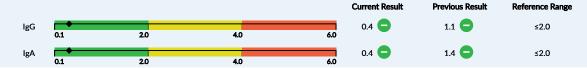
Soybeans alone are not a common food in American diets. Instead, they are frequently used in processed food products, as alternatives to meat. A trained clinical dietitian can help you plan for proper nutrition. Always read food labels and ask questions about ingredients when dining out.

Obvious sources of soy:	 Asian cuisine (including Chinese, Indian, Indonesian, Thai and Vietnamese)—even if you order a soy-free item, there is high risk of cross-contamination Soy (soy albumin, soy cheese, soy fiber, soy flour, soy grits, soy ice cream, soy milk, soy nuts, soy sprouts, soy yogurt) Cold-pressed, expelled or extruded soybean oil 	 Edamame Miso Natto Shoyu Soya Soybean (curd, granules) Soy protein (concentrate, hydrolyzed, isolate) Soy sauce Tamari Tempeh Textured vegetable protein Tofu
Less common sources of soy:	□ Vegetable gum □ Vegetable broth	 Vegetable starch
Unexpected sources of soy:	 Baked goods Canned broths and soups Canned tuna and meat Cereals Cookies Crackers Infant formulas 	 High-protein energy bars and snacks Low-fat peanut butter Pet food Processed meats Sauces Soaps and moisturizers



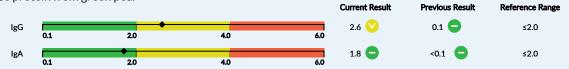
Gly m 1

Gly m 1 (8 kDa), also known as hydrophobic protein from soybean (HPS), is localized in soybean hulls. Gly m 1 has been identified as a principal antigen that causes soybean dust sensitivity. Gly m 1 is a member of the cysteine-rich protein family. Two isoforms are closely related to the physicochemical and immunochemical properties of Gly m 1, that were named Gly m 1A and Gly m 1B. Both isoforms were glycoproteins and showed a high percentage of hydrophobic residues in their amino acid composition. The high level of hydrophobicity explains why the protein is easily released from soybean hull dust, and how it can permeate the mucosal membranes of the respiratory tract to produce asthmatic reactions. 4



Gly m 2

Gly m 2 (8 kDa), also known as defensin, is localized in soybean hulls. Gly m 2 in soybeans could protect against diseases which affect soybean plants. Gly m 2 has been discovered as one of the three principal antigens that causes soybean dust sensitivity besides Gly m 1A and Gly m 1B.5 Gly m 2 N-terminal amino acid sequence lacks homology with that reported for the allergen Gly m 1, but has a homology of 71% with a storage protein from cotyledon of cow pea and 64% with a disease response protein from green pea.



Gly m3

Gly m 3 (15 kDa), also known as profilin, is a metabolic protein found in both plant and animal sources but only plant profilins are recognized as antigens. Profilins regulate polymerization of actin into filaments through the formation of profilactin complexes. Individuals with sensitivity to profilin from one plant source may react to profilins in other plant sources. Fractional peptides of recombinant soy profilin (rGlym3, 14 kDa) has been shown to have no significant binding reactivity to antibodies. Food processing (i.e., heating, enzymatic hydrolysis, fermentation) may reduce antibody-binding capacity of profilin and, therefore, remove profilin of soy.

Current Result

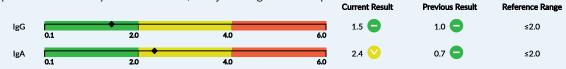
Previous Result

Reference Range



Gly m 4

Gly m 4 is a pathogenesis-related class 10 protein in soybean. Gly m 4 is one of the major soybean antigens. The symptoms for Gly m 4-mediated soybean sensitive subjects are typically localized in the skin, gastrointestinal tract, or the respiratory tract, while some of the severe cases may lead to anaphylaxis. Soy milk is the most prevalent food that induces symptoms in those who have been exposed, whereas soybean sensitive individuals rarely react to fermented soybean products. Gly m 4 is somewhat heat-labile but also apparently susceptible to degradation by fermentation. Cross-reactivity has also been reported between Gly m 4 and Bet v 1, a major allergen of birch pollen.





LAST NAME	FIRST NAME	MIDDLE NAME	GENDER	DATE OF BIRTH	ACCESSION ID
TESTNAME	PATIENT		MALE	1996-10-22	1512010000

Gly m 5

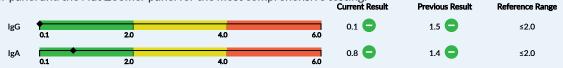
Gly m 5, also known as β -conglycinin, is a vicilin-like protein in soybean. As a seed-storage globulin, vicilin is a major component of plant seeds and constitutes important protein sources for the human diet. Vicilin is also known as 7S globulins, which are quantitatively important seed-storage proteins. The exposure route to the Gly m 5 reaction is through soybean ingestion. Gly m 5 and Gly m 6 are potential diagnostic markers for severe soy allergic reactions 9 as well as a major antigen for children. 10 Gly m 5 is homologous to a major peanut antigen Ara h 1. 11 Consider running the Peanut Zoomer panel for the most comprehensive testing.



Gly m 6

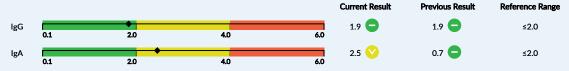
Gly m 6, also known as glycinin, is a legumin-like protein in soybean. As a seed-storage globulin, legumin is a major component of plant seeds and constitutes important protein sources for the human diet. Legumins are also known as 11S glycinin, which are quantitatively important seed-storage proteins. The exposure route to the Gly m 6 reaction is through soybean ingestion. Gly m 5 and Gly m 6 are potential diagnostic markers for severe soy allergic reactions as well as a major antigen for children. Gly m 6 is homologous to a major peanut antigen Ara h 3. Consider running the Peanut Zoomer panel and the Nut Zoomer panel for the most comprehensive testing.

Current Result Previous Result Reference Range



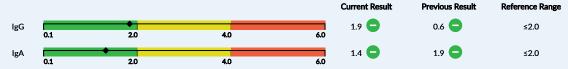
Gly m 7

Gly m 7 is a seed-specific biotinylated protein (SBP) in soybean. Expression of a full length SBP cDNA produced a protein of approximately 70 kDa that was heat-resistant to boiling. Possible cross-reactivity has been suggested between SBP from peanut and soy. ¹² Consider running the Peanut Zoomer panel and the Nut Zoomer panel for the most comprehensive testing.



Gly m8

Gly m 8, also known as Gly m 2S albumin, is a soy protein that has the best diagnostic value in adults. ¹³ In a recent study, IgE to Gly m 8 was analyzed among children from the US who underwent oral food challenges for the evaluation of suspected soy antigen. Gly m 8 was proven to be more specific for predicting clinical reactivity, and equally sensitive to skin prick test and the soy specific IgE test. ¹⁴





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Cry1Ac GMO protein

Pesticidal crystal proteins (thus the name "cry" proteins, short for crystal) are endotoxins produced by Bacillus thuringiensis (Bt) and have been used to control crop pests since the 1920s. In the genetically engineered soybean, a Cry1Ac gene exhibits excellent efficacy against some lepidopteran pests. However, health risks have been shown to be associated with Bt toxins present in these genetically engineered plants and the residues left from spraying with the complementary herbicide. A risk assessment performed by the European Food Safety Authority (EFSA) has confirmed that:¹⁶

- □ There are potential combinatorial effects between plant components and other impact factors that might enhance toxicity.
- □ It is known that Bt toxins have immunogenic properties; because soybeans naturally contain many allergens, these immunogenic properties raise specific questions.
- Fully evaluated and reliable protocols for measuring the Bt concentration in the plants are needed, in addition to a comprehensive set of data on gene expression under varying environmental conditions.
- Specific attention should be paid to the herbicide residues and their interaction with Bt toxins.



Gly m Bd 30k

Gly m Bd 30K is most strongly and frequently recognized by the antibodies in sera of soybean-sensitive patients with atopic dermatitis. Gly m Bd 30K had an N-terminal amino acid sequence and amino acid composition identical with those of the soybean seed 34-kDa oil-body-associated protein or the soybean vacuolar protein P34 with close homology to papain-like thiol proteinases. Gly m Bd 30K was shown to have about 30% sequence homology with Der pl, a house dust mite allergen that is a thiol proteinase from house dust mites. 18



Kunitz soybean trypsin inhibitor

Kunitz soybean trypsin inhibitor is a type of protein contained in legume seeds which functions as a protease inhibitor. Kunitz-type Soybean Trypsin Inhibitors are usually specific for either trypsin or chymotrypsin. They are thought to protect seeds against consumption by animal predators. Kunitz soybean trypsin inhibitor (STI) has been identified as a potent antigen capable of inducing food anaphylaxis. In a recent study of 14 bakers with work-related respiratory symptoms who were sensitized to soybean flour, the results of serologic tests suggested that STI and lipoxidase were major allergens of soybean.¹⁹





Citations/Sources

Anaphylaxis

Anaphylaxis causes the immune system to release a flood of chemicals that can cause shock — blood pressure drops suddenly, and airways narrow, blocking breathing. Signs and symptoms include a rapid, weak pulse; a skin rash; and nausea and vomiting. Common triggers include certain foods, some medications, insect venom, and latex.

Antibody

An antibody, also known as an immunoglobulin (Ig), is a large, Y-shaped protein produced mainly by plasma cells that is used by the immune system to neutralize pathogens such as pathogenic bacteria and viruses.

Cross reactivity

Cross reactivity happens when an antibody directed against one specific antigen (allergen) is successful in binding with another different antigen.

cDNA

Complementary DNA (cDNA) is DNA synthesized from a single stranded RNA (e.g., messenger RNA (mRNA) or microRNA) template in a reaction catalyzed by the enzyme reverse transcriptase.

Cysteine

Cysteine is a non-essential sulfur-containing amino acid in humans, related to cystine. Cysteine is important for protein synthesis, detoxification, and diverse metabolic functions.

IgA

Immunoglobulin A (IgA), as a major class of antibody present in the mucosal secretions of most mammals, represents a key first line of defense against invasion by inhaled and ingested pathogens at the vulnerable mucosal surfaces.

IgG

Immunoglobulin G (IgG), as the most abundant type of antibody, is found in all body fluids and protects against bacterial and viral infections. An IgG reaction to food proteins suggests tolerance related to immune cell reaction. Repeated exposure, inflammation, and immune reactivity contribute to sensitivity and high IgG in response to food proteins.

Isoform

A protein isoform is one of a number of different structurally similar proteins that are created as the result of alternative splicing or from similar genes formed from a copied gene and differentiated as the result of evolution.

Trypsin

Trypsin is found in the digestive system of many vertebrates, where it hydrolyzes proteins.



Citations/Sources

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Risk and Limitations

This test has been developed and its performance characteristics determined by Vibrant America LLC., a CLIA certified lab. These assays have not been cleared or approved by the U.S. Food and Drug Administration.

Allergen-specific IgE assays do not demonstrate absolute positive and negative predictive values for allergic disease. Clinical history must be incorporated into the diagnostic determination. Quantification of specific IgG and IgA antibodies is not FDA-recognized diagnostic indicator of allergy.

Soy Zoomer testing is performed at Vibrant America, a CLIA certified laboratory and utilizes ISO-13485 developed technology. Vibrant America has effective procedures in place to protect against technical and operational problems. However, such problems may still occur. Examples include failure to obtain the result for a specific antigen due to circumstances beyond Vibrant's control. Vibrant may re-test a sample in order to obtain these results but upon re-testing the results may still not be obtained. As with all medical laboratory testing, there is a small chance that the laboratory could report incorrect results. A tested individual may wish to pursue further testing to verify any results.

The information in this report is intended for educational purposes only. While every attempt has been made to provide current and accurate information, neither the author nor the publisher can be held accountable for any errors or omissions.

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