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a precision medicine company

Autoimmune Brain Panel™

(formerly known as the Cunningham Panel™)

Revolutionizing the way we look at neuropsychiatric disorders.

What is the Autoimmune Brain Panel™?

The Autoimmune Brain Panel™ – a series of high complexity blood tests that assists clinicians in determining whether a patient's neuropsychiatric symptoms may be due to an underlying infection-triggered autoimmune response.

This autoimmune response may be directed against dopamine receptors, lysoganglioside and/or tubulin or it may stimulate an enzyme (CaMKII) which regulates production of certain neurotransmitters.

Each of these autoantibody targets have been associated with the presence of various neuropsychiatric symtoms, including obsessive compulsive behaviors, tics, anxiety, depression, restricted eating, and ADHD-like behaviors.

The Panel measures the level of autoantibodies directed against these specific targets and their ability to stimulate neurologic and/or psychiatric symptoms.

Why is testing important?

It is important to know whether psychiatric symptoms, neurologic manifestations or a change in behavior or personality is due to an autoimmune encephalopathy rather than a primary psychiatric illness, as effective treatment differs for each.

With proper treatment, a patient's symptoms can be greatly reduced or completely resolved.

VIEW PRESENTATION
Utilizing the Autoimmune Brain Panel™ in Clinical Practice

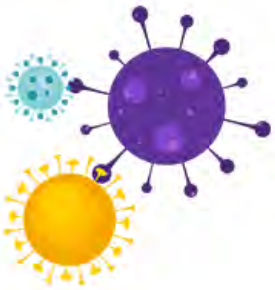
LEARN MORE
Autoimmune Brain Panel™ Overview

SCHEDULE CONSULTATION
How can this test aid your diagnosis?

How do infections trigger neuropsychiatric symptoms?

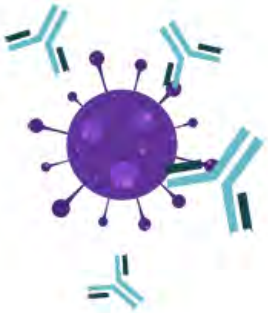
Common infections can trigger the immune system to produce antibodies which mistakenly attack healthy tissue in the central nervous system and basal ganglia region of the brain. This can disrupt normal neuronal cell function and trigger inflammation in the brain, resulting in the onset of neurologic and/or psychiatric symptoms.

BACTERIA/VIRUS



Bacteria, viruses, fungal infections or other trigger stimulates the immune system.

ANTIBODIES PRODUCED



Cross-reactive autoimmune antibodies are produced to destroy the infectious organism.

TARGET BASAL GANGLIA

Cross-reactive autoimmune antibodies mistakenly target healthy cells in the basal ganglia region of the brain.

NEURONAL TARGETS

These autoimmune antibodies can bind to or block neuronal targets in the brain.

(Dopamine D1 and D2 receptors, Lysoganglioside GM-1, Tubulin)

NEURONS FIRING

Resulting in immune-mediated inflammation and disruption of normal cell functioning.

NEUROLOGIC SYMPTOMS

Leading to onset of various neurologic, psychiatric and/or behavioral symptoms.

An autoimmune response can mimic certain neurologic and psychiatric disorders.

Neurologic, psychiatric and/or behavioral symptoms (such as those shown below) can result from an infection-triggered autoimmune encephalopathy or basal ganglia encephalitis.

Obsessions and Compulsions

LEARN MORE

Anxiety Disorders

LEARN MORE

Motor and Vocal Tics

LEARN MORE

Seizures and Convulsions

LEARN MORE

Attention Deficit Hyperactivity Disorder

LEARN MORE

Depression and Mood Changes

LEARN MORE

Autism Spectrum Disorders

LEARN MORE

Chronic Fatigue Syndrome

LEARN MORE

PANS and PANDAS

LEARN MORE

Lyme Disease

LEARN MORE

* *PANS – Pediatric Acute-onset Neuropsychiatric Syndrome; PANDAS – Pediatric Autoimmune Neuropsychiatric Disorder Associated with Streptococcal infections*

HOW INFECTIONS CAUSE SYMPTOMS

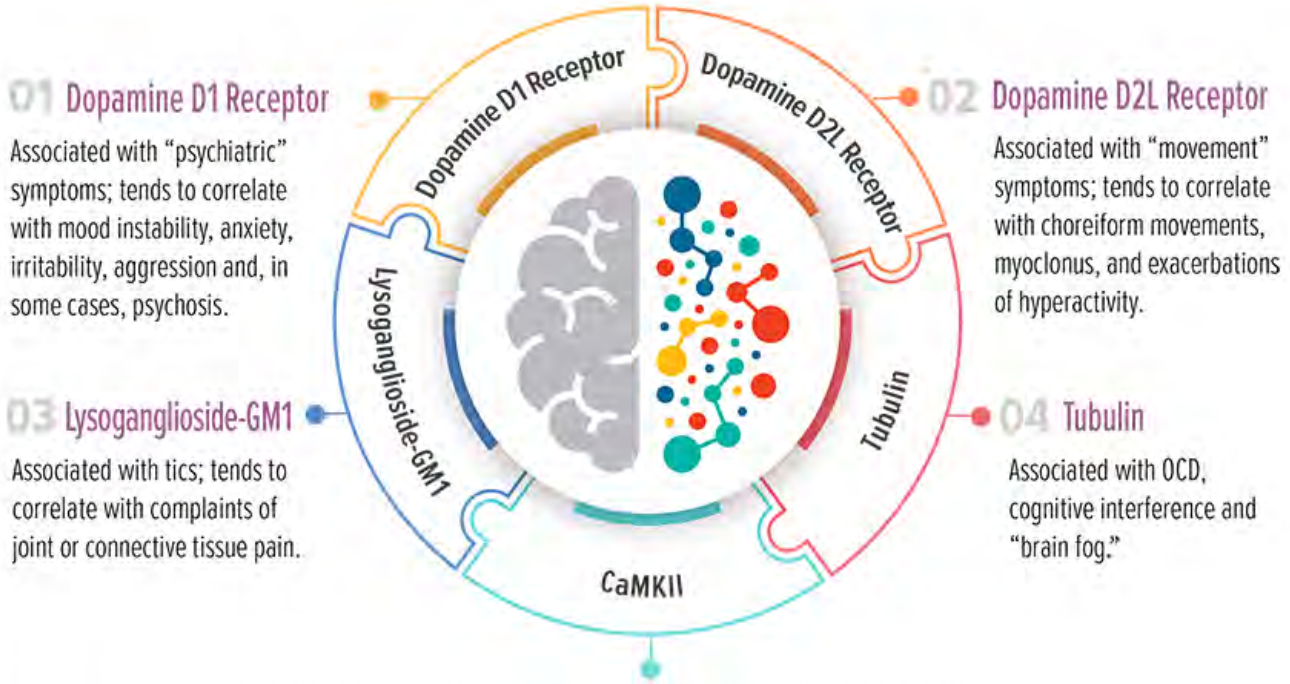
RECOGNIZING SYMPTOMS

The Autoimmune Brain Panel™ can assist clinicians in diagnosing infection-triggered autoimmune encephalopathy syndromes by providing laboratory evidence of an underlying autoimmune dysfunction.

The Autoimmune Brain Panel™ includes 5 metabolic tests:

4 tests measure the levels of circulating autoantibodies in serum that are directed against and bind to, or block specific neuronal targets in the brain. (Each target is associated with the presence of certain neuropsychiatric symptoms.)

The **5th test measures** the ability of the patient's autoantibodies to stimulate the CaMKII enzyme that is responsible for the upregulation of brain neurotransmitters, such as dopamine, epinephrine and norepinephrine. This increase can trigger various neuropsychiatric symptoms.



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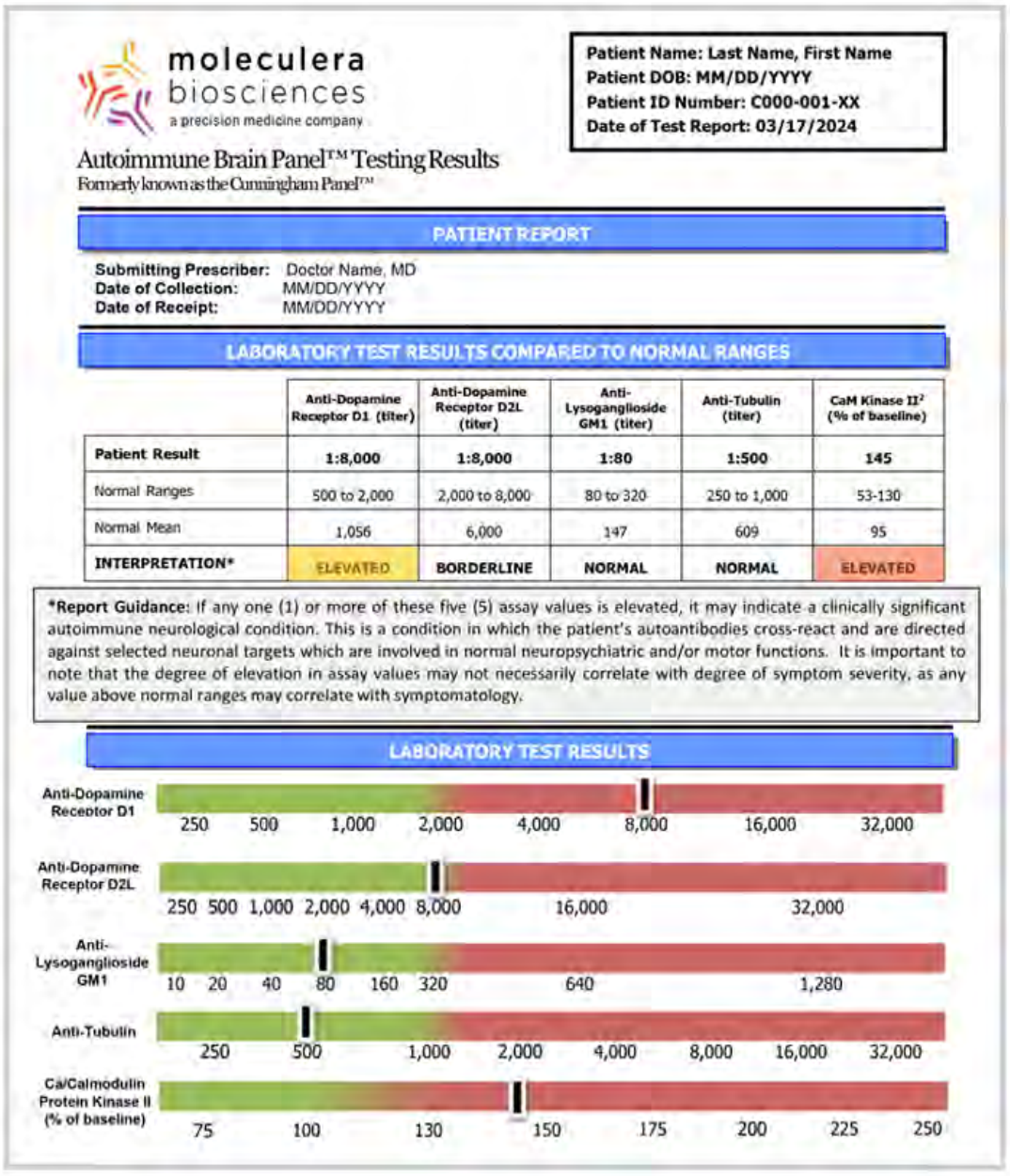
SCHEDULE CONSULTATION
How can this test aid your diagnosis?

Understanding test results.

Autoimmune Brain Panel™ test results can support a physician's clinical diagnosis with laboratory evidence and assist the clinician in determining an appropriate treatment regimen. Test results are expressed as a titer, or final dilution, at which an endpoint reaction was observed on an Enzyme-Linked Immunosorbent Assay (ELISA) format.



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Patient Name: Last Name, First Name
Patient DOB: MM/DD/YYYY
Patient ID Number: C000-001-XX
Date of Test Report: 03/17/2024

Autoimmune Brain Panel™ Testing Results
Formerly known as the Cunningham Panel™

PATIENT REPORT

Submitting Prescriber: Doctor Name, MD
Date of Collection: MM/DD/YYYY
Date of Receipt: MM/DD/YYYY

LABORATORY TEST RESULTS COMPARED TO NORMAL RANGES

	Anti-Dopamine Receptor D1 (titer)	Anti-Dopamine Receptor D2L (titer)	Anti-Lysoganglioside GM1 (titer)	Anti-Tubulin (titer)	CaM Kinase II² (% of baseline)
Patient Result	**1:8,000**	**1:8,000**	**1:80**	**1:500**	**145**
Normal Ranges	500 to 2,000	2,000 to 8,000	80 to 320	250 to 1,000	53-130
Normal Mean	1,056	6,000	147	609	95
INTERPRETATION*	ELEVATED	BORDERLINE	NORMAL	NORMAL	ELEVATED

***Report Guidance:** If any one (1) or more of these five (5) assay values is elevated, it may indicate a clinically significant autoimmune neurological condition. This is a condition in which the patient's autoantibodies cross-react and are directed against selected neuronal targets which are involved in normal neuropsychiatric and/or motor functions. It is important to note that the degree of elevation in assay values may not necessarily correlate with degree of symptom severity, as any value above normal ranges may correlate with symptomatology.

LABORATORY TEST RESULTS

Positive = 1 or more elevated assays

Indicates neuropsychiatric symptoms may be due to an infection-triggered autoimmune process.

CaMKII cell stimulation test

Elevated levels may indicate onset of a new infection or reactivation of a previous infection.

Borderline or low CaMKII may indicate a subclinical or occult chronic infection.

***Note:** The Autoimmune Brain Panel™ does not directly identify infectious agents, but points to the likelihood of an infectious stimulus being present.*

Results you can count on.

Study demonstrates clinical value of the Autoimmune Brain Panel™ and accuracy in patients with symptoms of autoimmune encephalopathy.[1]

In comparing pre- and post-treatment patient symptom status, findings revealed that the Autoimmune Brain Panel™ results paralleled changes in a patient's neuropsychiatric symptoms following treatment.

WATCH STUDY REVIEW
Dr. Craig Shimasaki reviews study findings.

READ STUDY
Evaluation of the Autoimmune Brain Panel in PANS/PANDAS patients.

Clinical studies show the Autoimmune Brain Panel™ can help guide treatment.

Ordering the Autoimmune Brain Panel™

Moleculera Biosciences can accept authorized clinician test orders from all 50 states in the United States and other countries. (New York patients must have their blood collected outside the State of New York.) Ordering is easy – view how the process works below.

01

Log Into Portal

The prescriber portal allows practitioners to order tests and retrieve and review results.

02

Submit Order

Place an order for the Autoimmune Brain Panel™ in the prescriber portal and submit the patient's information.

03

Supplies Sent

Specimen collection supplies are sent to the patient's address or to the physician's office.

04

Patient Blood Draw

Patient has blood collected at physician's site or an alternate phlebotomy location.

05

Specimen Sent In

Serum sample and the completed patient forms are sent to Moleculera Biosciences.

06

Results To Provider

Patient results are available on prescriber portal. Prescriber is notified by e-mail when results are available.

ORDERING INFORMATION

Learn all you need to know about ordering the Autoimmune Brain Panel.

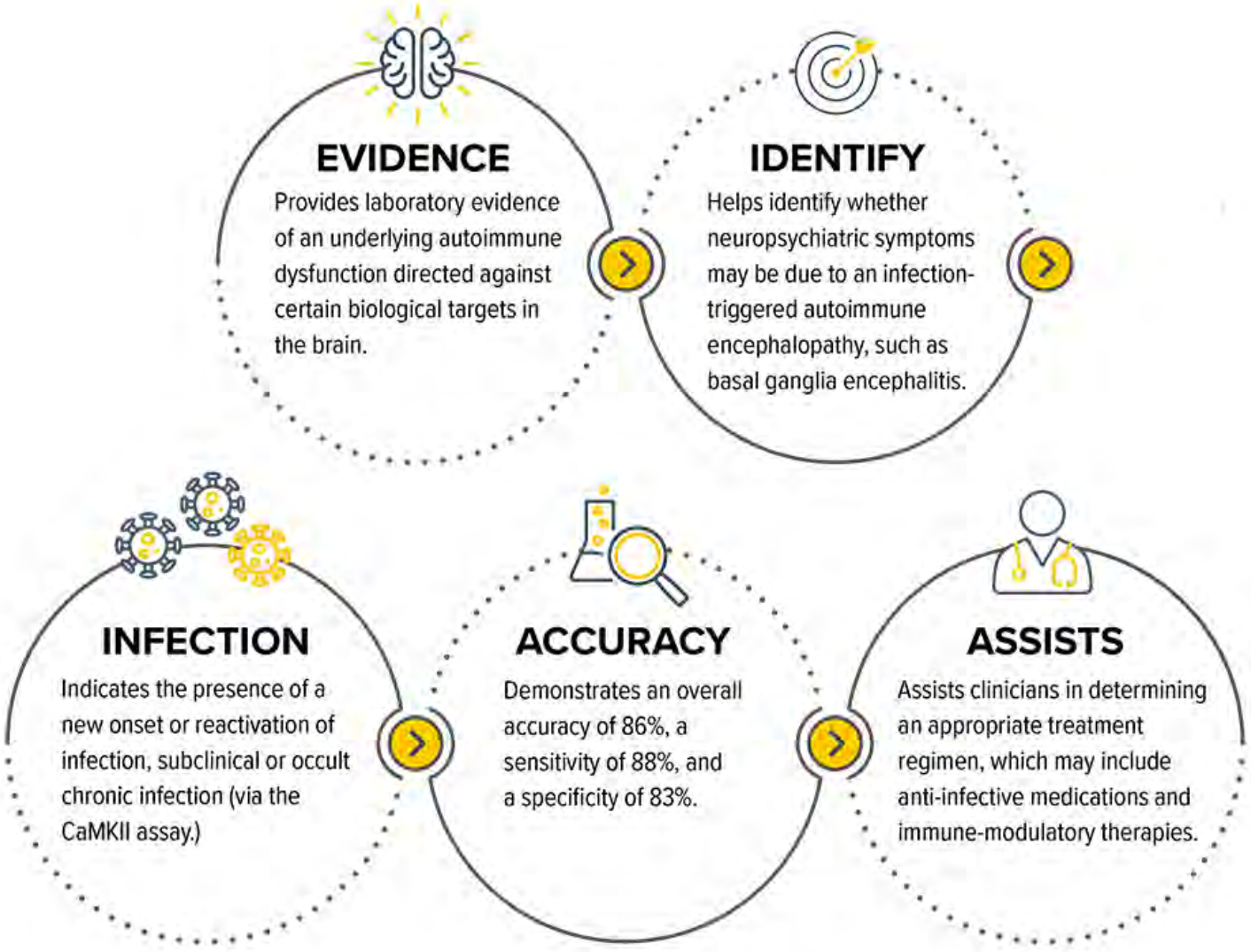
LOG INTO PORTAL

Log in to order tests and retrieve and review results.

Why order the Autoimmune Brain Panel™?

Neuropsychiatric and behavioral symptoms can arise from a spectrum of reasons. If an infection-triggered autoimmune etiology is identified, these patients have been shown to clinically respond to anti-inflammatory, immune modulatory and anti-infective medications.

Identifying an autoimmune etiology can change the course of treatment. When treated properly, symptoms can resolve completely or may be greatly reduced.[2] Furthermore, studies suggest that when diagnosed and treated early, patients have a greater chance for a complete recovery.



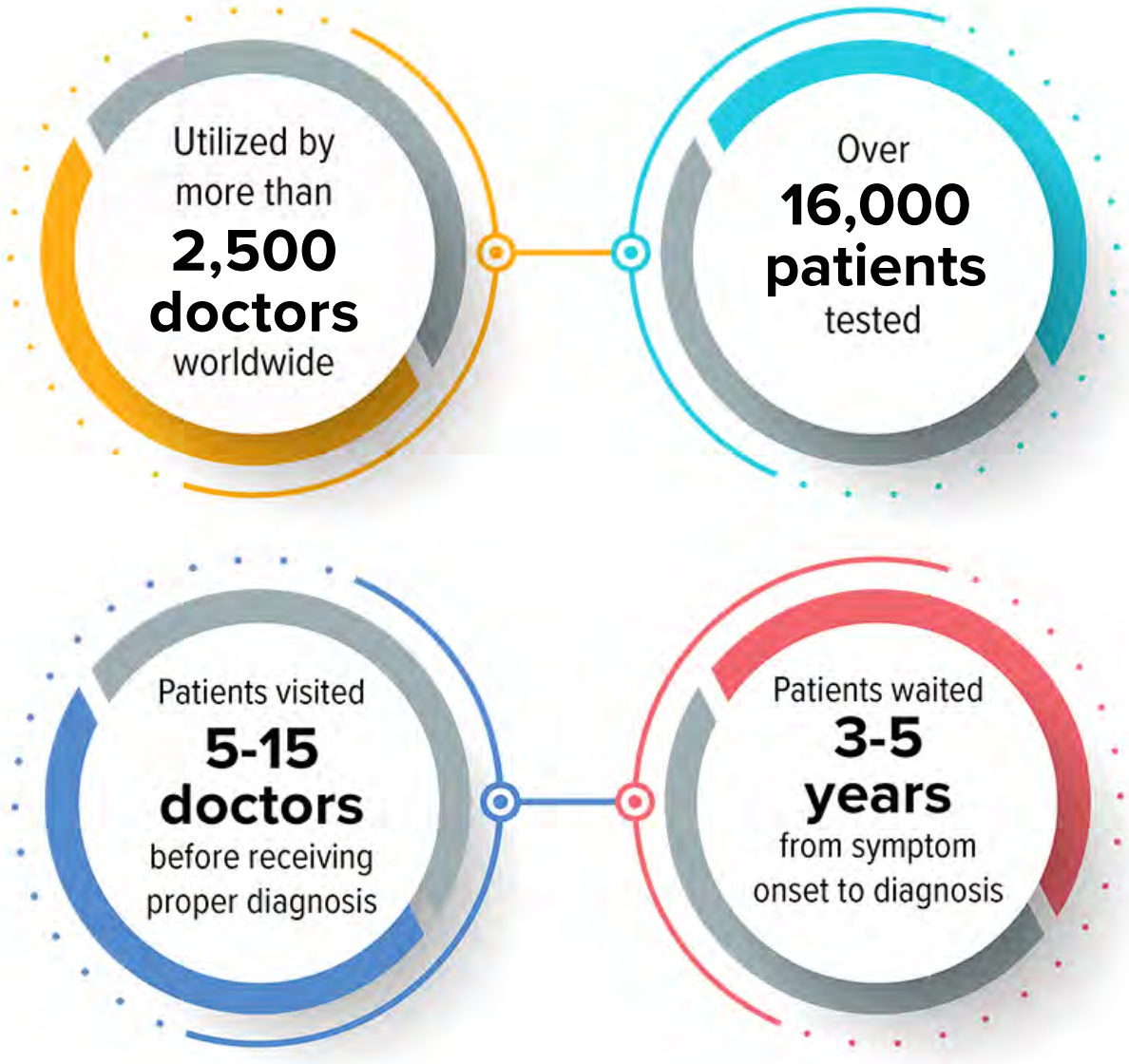
ORDERING INFORMATION
Learn all you need to know about ordering The Autoimmune Brain Panel.™

SCHEDULE CONSULTATION
Is this test right for your patient?

Insights to help guide treatment.

We are dedicated to advancing the understanding and recognition of infection-triggered autoimmune neuropsychiatric disorders.

Our goal is to assist clinicians in identifying an underlying autoimmune etiology in patients presenting with neuropsychiatric symptoms in the early stage of illness.



CONTACT US
We're here to help.

SCHEDULE CONSULTATION
Is this test right for your patient?

How are clinicians utilizing the test to help patients?

“It gives us evidence of anti-neuronal activity...We’re just at the beginning of learning about the role of infections in psychiatric illness.”

— Dr. Rosalie Greenberg

"The Panel becomes crucial in my workup of these patients to find out how much of an autoimmune process I’ve got going on."

— Dr. Gary Kaplan

"This is the only test that could help me determine whether the root cause was of an infectious etiology or inflammatory."

— Dr. Eboni Cornish

"The Panel helps you determine whether a patient still needs prolonged treatment or maybe it’s time to stop."

—Dr. Magdalena A. Cubala-Kucharska

"I think that the CaMKinase is the most important assay and changes with the severity of disease, at least in my experience."

— Dr. Beth Latimer

“The Panel can help family members understand that this is a physiological condition. You’ve got antibodies [attacking] tissue in your brain.

— Dr. Michele deAntonio

WATCH CLINICIAN TESTIMONIALS

WATCH PATIENT STORIES

Laboratory and testing information

The targets in the Autoimmune Brain Panel™ (formerly known as the Cunningham Panel™) arose from over 20 years of basic research in the laboratory of Dr. Madeleine Cunningham at the University of Oklahoma, in conjunction with scientists from the National Institutes of Mental Health (NMHI).

Moleculera Biosciences is an accredited CLIA (Clinical Laboratory Improvement Amendment) and COLA (Commission on Laboratory Accreditation) laboratory (CLIA: 37D2082408; COLA: 25744).

We're here to help.

If you have questions or would like to learn more about the test, please contact us at 405-239-5250 or email customerservice@moleculera.com.

References

1. Shimasaki C, Frye RE, Trifiletti R, Cooperstock M, Kaplan G, Melamed I, Greenberg R, Katz A, Fier E, Kem D, Traver D, Dempsey T, Latimer ME, Cross A, Dunn JP, Bentley R, Alvarez K, Reim S, Appleman J. Evaluation of the Cunningham Panel™ in pediatric autoimmune neuropsychiatric disorder associated with streptococcal infection (PANDAS) and pediatric acute-onset neuropsychiatric syndrome (PANS): Changes in antineuronal antibody titers parallel changes in patient symptoms. J Neuroimmunol. 2020 Feb 15;339:577138. doi: 10.1016/j.jneuroim.2019.577138. Epub 2019 Dec 15. PMID: 31884258.

2. Jennifer Frankovich, Susan Swedo, Tanya Murphy, Russell C. Dale, Dritan Agalliu, Kyle Williams, Michael Daines, Mady Hornig, Harry Chugani, Terence Sanger, Eyal Muscal, Mark Pasternack, Michael Cooperstock, Hayley Gans, Yujuan Zhang, Madeleine Cunningham, Gail Bernstein, Reuven Bromberg, Theresa Willett, Kayla Brown, Bahare Farhadian, Kiki Chang, Daniel Geller, Joseph Hernandez, Janell Sherr, Richard Shaw, Elizabeth Latimer, James Leckman, Margo Thienemann, and PANS/PANDAS Consortium.Journal of Child and Adolescent Psychopharmacology.Sep 2017.574-593.http://doi.org/10.1089/cap.2016.0148