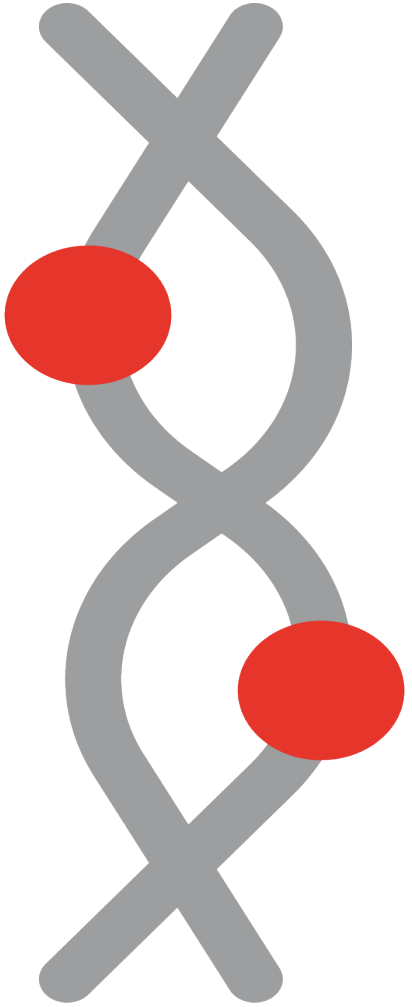
Fagron genomics



Gene Comprehensive Nutrigenomic Report

Accession Number: ##########
Specimen Collected: ##/##/####
Specimen Received: ##/##/####
Report Generated: November 30, 2022
Specimen Type: Buccal Swab
Provider: ######## ########
Patient Name: ###### ######
Patient DOB: ##/##/####
Patient Gender: Female

Do not make any decisions about your health solely based on the information contained in this report. Always consult with a licensed and experienced health practitioner when you receive this report.

GX Sciences | 844-258-5564 | www.GXSciences.com
Lab | 4150 Freidrich Lane, Ste H | Austin, TX 78744
Laboratory Director: James W. Jacobson, Ph.D

– 28 – Female

(-/-) No clinical abnormality | (+/-) Heterozygous result | (+/+) Homozygous result

rsID	Gene	Genetic Result	Therapeutics Associated With Positive Result	Highly Recommended Therapeutics	Provider Discretion: As Needed Formula Recommendations	Lifestyle Recommendations	Laboratory Recommendations
Chronic Pain							
Inflammation Control							
rs10402876	C3	+/-	Anti-Inflammatory Therapy: Curcumin, Omega 3s, Resveratrol, Quercetin, Low Dose Naltrexone (LDN), CBD Oil	**CBD Oil, PEA Soothe Support ™, Prescription Low Dose Naltrexone (LDN)**		Consider Low Inflammatory Diet	Consider Pregnenolone, Cortisol, Progesterone, Testosterone, T cell profile, Sed Rate, ANA, C Reactive Protein, Routine Thyroid Panel, Candida Titer, EBV Titer, Food Allergy Panel, Environmental Allergy Testing
rs2569191	CD14	+/-					
rs1143634	IL1B	-/-					
rs1800795	IL6	-/-					
rs2069812	IL5	+/-					
rs1800925	IL13	+/-					
rs10181656	STAT4	+/-					
rs1800629	TNF	-/-					
rs231775	CTLA4	+/-					
rs1076560	DRD2	+/-	Increased Efficacy of Naltrexone	**Prescription Low Dose Naltrexone (LDN) for Inflammation Control (High Response Rate)**		Expect Inceased Efficacy of Low Dose Naltrexone For Pain Control	

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rsID	Gene	Genetic Result	Therapeutics Associated With Positive Result	Highly Recommended Therapeutics	Provider Discretion: As Needed Formula Recommendations	Lifestyle Recommendations	Laboratory Recommendations
Chronic Pain							
Chemical Detoxification							
rs1021737	CTH	-/-	N-Acetyl Cysteine (NAC), Glutathione				
rs819147	AHCY	-/-					
rs1056806	GSTM1	-/-	Glutathione				
rs7483	GSTM3	+/-					
rs1695	GSTP1 I105V	+/-					
Neurotransmitters / Pain Control							
rs4680	COMT V158M	+/+	Taurine, Choline, TMG, DMG, Methionine, SAMe, Inositol	**Full Focus, Advanced Neurotransmitter Support**			Consider Neurotransmitter Testing and PGX
rs769407	GAD1	-/-	Prescription Amantadine, Ketamine, Glycine, N-Acetyl-Cysteine (NAC), Zinc, Magnesium, Oxaloacetate, Elderberry, L-Theanine, Melatonin		Pro GAD Enhancer™ Melatonin Calming Cream™ Prescription Amantadine Prescription Ketamine		Consider Neurotransmitter Testing Consider PGx Testing
rs3828275	GAD1	+/-					
rs1799971	OPRM1 A118G	-/-	Defines Sensitivity To Opiates				Consider PGx Testing
rs1045642	ABCB1 C3435T	+/+				Patient Should Need Lower Dose of Opioids For Pain Control	

Summary for Chronic Pain

Highly Recommended Therapeutics

- CBD Oil
- PEA Soothe Support™
- Prescription Low Dose Naltrexone (LDN)
- Prescription Low Dose Naltrexone (LDN) for Inflammation Control (High Response Rate)
- Full Focus
- Advanced Neurotransmitter Support

Provider Discretion: As Needed Formula Recommendations

- Pro GAD Enhancer™
- Melatonin
- Calming Cream™
- Prescription Amantadine
- Prescription Ketamine

Lifestyle Recommendations

- Consider Low Inflammatory Diet
- Expect Inceased Efficacy of Low Dose Naltrexone For Pain Control
- Patient Should Need Lower Dose of Opioids For Pain Control

Laboratory Recommendations

- Consider Pregnenolone
- Cortisol
- Progesterone
- Testosterone
- T cell profile
- Sed Rate
- C Reactive Protein
- Routine Thyroid Panel
- Candida Titer
- EBV Titer
- Food Allergy Panel
- Environmental Allergy Testing
- Consider Neurotransmitter Testing and PGX
- Consider Neurotransmitter Testing
- Consider PGx Testing

Gene Information Key

rsID	Gene	"-" variant	"+" variant
rs1045642	ABCB1 C3435T	G	A
rs819147	AHCY	T	C
rs10402876	C3	G	C
rs2569191	CD14	T	C
rs4680	COMT V158M	G	A
rs1021737	CTH	G	T
rs231775	CTLA4	A	G
rs1076560	DRD2	C	A
rs3828275	GAD1	C	T
rs769407	GAD1	G	C
rs1056806	GSTM1	C	T
rs7483	GSTM3	C	T
rs1695	GSTP1:I105V	A	G
rs1800925	IL13	C	T
rs1143634	IL1B	G	A
rs2069812	IL5	A	G
rs1800795	IL6	G	C
rs1799971	OPRM1 A118G	A	G
rs10181656	STAT4	C	G
rs1800629	TNF	G	A

Definitions

DETOXIFICATION	Detoxification enzymes are responsible for clearing environmental chemicals and metabolites from our body. Accumulation of these chemicals and by-products can damage intracellular biochemical functions. Alterations in these systems can have a significant negative effect on the nervous system and immune systems functions. These polymorphisms can result in decreased "quality of life" and even decreased "life-span".
AHCY	Adenosylhomocysteinase (AHCY) is an enzyme that breaks down S-adenosylhomocysteine (SAH) to homocysteine and adenosine. Polymorphisms in this gene will lead to lower levels of homocysteine and glutathione.
CTH	Glutathione production is dependent on the function of the enzyme cystathionine gamma-lyase (CTH). CTH converts cystathionine to cysteine. Individuals with mutations in the CTH gene are predicted to have decreased glutathione-mediated detoxification.
GSTM1	Glutathione S-transferase M1 (GSTM1) is an important enzyme in the body's detoxification pathway. GSTM1 conjugates glutathione to molecules (drugs, environmental toxins, carcinogens etc.) bound for excretion. GSTM1 is mainly responsible for binding toxins in joints and for binding carcinogens.
GSTM3	Glutathione S-transferase mu 3 is an enzyme that detoxifies drugs, environmental toxins, and carcinogens by conjugating toxins to glutathione and subsequent excretion by the kidneys. Mutations in GSTM3 are associated with decreased clearance of toxins, anesthetics and drugs from the nervous system.
GSTP1	Glutathione S-transferases (GSTs) are a family of enzymes that play an important role in detoxification. The glutathione S-transferase pi gene (GSTP1) functions in chemical clearance and anti-inflammatory properities. High concentration of GST-p are found in the skin, lungs, sinuses, bladder and the intestinal tract. Polymorphisms of this enzyme allow for increased inflammatory activity in these areas that include eczema, asthma, chronic sinusitis, IBS, "leaky" gut and interstitial cystitis.
DEVELOPMENTAL	The SNPs in this category have been identified as potential areas of weakness in the recovery of developmental disorders.
ABCB1:C3435T	The ABCB1 gene encodes the multidrug resistance (MDR) protein, a membrane pump that effluxes drugs from the cytoplasm to the extracellular fluid. MDR is enormously important in formation of brain and gut barriers, drug and nutrient excretion, and normal development. Mutations in the ABCB1 gene are associated with a host of perturbations in an individual's response to drugs and nutrients.
INFLAMMATORY	This Enzyme category has significant effects on the inflammatory state of a person's body. Polymorphisms in these specific enzymes will significantly increase the levels of inflammation in the body. By supplementing these enzyme deficiencies, the patient will effectively reduce inflammatory damage to the body.
C3	Essential for the immune response, C3 is a protein involved in initiation of the complement system. C3 polymorphisms are associated with susceptibility to asthma and other inflammatory disorders.
CD14	The CD14 protein is a macrophage cell surface receptor that binds bacterial cell wall components. As one of the initiators of the innate immune response, fully functional CD14 is necessary for normal response to potential pathogens. Mutations in the CD14 gene are associated with susceptibility to asthma and other allergen-mediated inflammatory processes.
CTLA4	Cytotoxic T-lymphocyte Associated protein 4 (CTLA4) is an important inhibitor of T-cell activity: CTLA4 is part of the signaling cascade that turns off overactive T cells. Mutations in the gene that encodes CTLA4 are associated with a host of diseases characterized by a heightened immune state.
DRD2	Dopamine receptor D2 is an important component of the neuroinflammation process. Activation of DRD2 signaling is thought to decrease TNFalpha release from inflammatory mast cells. Polymorphisms associated with decreased DRD2 signaling activity are predicted to lead to pro-inflammatory phenotypes.
IL13	IL13 (Interleukin 13) is a member of the interleukin family of chemical messengers of the immune system. Polymorphisms in this gene are associated with changes in IL13 gene expression and increase the risk of more severe inflammatory responses to allergens.
IL5	The protein product of the Interleukin 5 gene (IL5) is important for normal development of B lymphocytes and eosinophils (a pro-inflammatory white blood cell). Inactivating mutations in the IL5 gene are associated with susceptibility to certain viral infections and increased aggression of inflammatory response. These polymorphisms are also associated with increased aggression of allergies, asthma and eosinophilia.
IL6	Interleukin 6, IL6, is an important pro-inflammatory cytokine. Polymorphisms in this gene leads to a more aggressive inflammatory response. Patients with IL-6 mutations require assistance with inflammatory control.
STAT4	The Signal Transducer and Activator of Transcription 4 (STAT4) gene encodes a transcription factor that responds to extracellular growth factors and cytokines. Mutations in the STAT4 gene are associated with inflammatory disorders like lupus and rheumatoid arthritis.
TNF	Tumor necrosis factor, TNF, is an important pro-inflammatory signaling molecule. Polymorphisms in the protein coding part of this gene are associated with more severe pro-inflammatory responses and require supplementation for inflammatory control.
NEUROTRANSMITTER	Neurotransmitters are chemicals that are used to produce specific effects in the nervous system. These specific neurotransmitter genomics assess a person's risk for anxiety, depression and dysphoria.

COMT V158M	Catechol-O-methyltransferase (COMT) is one of several enzymes that degrade catecholamine neurotransmitters such as dopamine, epinephrine, and norepinephrine. COMT's main function is to inactivate neurotransmitters (dopamine, epinephrine, and norepinephrine) by the addition of a methyl group to the catecholamine. Normal COMT function allows people to rapidly reverse feelings of anxiety or depression. COMT (+/-) patients have sluggish ability to alter anxiety or depression episodes. COMT (+/+) patients are more prone to prolonged episodes of anxiety, depression and OCD.
GAD1 rs3828275	Glutamic Acid Decarboxylase (GAD 1) is the enzyme responsible for conversion of glutamic acid (a stimulant neurotransmitter) to GABA (a calming neurotransmitter). Deficiency of GABA from polymorphisms in this enzyme are associated with sleep disorders, "half glass empty" syndrome, dysphoria, and spasticity.
IL1B	Interleukin 1B is the pro-inflammatory cytokine responsible for inducing cyclooxygenase-2 (COX2) expression in the central nervous system. COX2 enzymatic function leads to prostanoid signaling that increases pain sensation associated with inflammation. Mutations in the IL1B gene are associated with many chronic inflammation disorders.
OPRM1:A118G	The OPRM1 (mu opioid receptor) is involved in pain sensitization. Polymorphisms in this gene typically are more sensitive to chronic pain and require higher doses of opioids for pain control.

Disclaimers

TESTING:

Testing Performed By: AMH

METHODOLOGY AND LIMITATIONS:

Testing for genetic variation/mutation on listed genes was performed using ProFlex PCR and Real-Time PCR with TaqMan® allele-specific probes on the QuantStudio 12K Flex. All genetic testing is performed by GX Sciences, 4150 Freidrich Lane, Ste H, Austin, TX. 78744. This test will not detect all the known alleles that result in altered or inactive tested genes. This test does not account for all individual variations in the individual tested. Test results do not rule out the possibility that this individual could be a carrier of other mutations/variations not detected by this gene mutation/variation panel. Rare mutations surrounding these alleles may also affect our detection of genetic variations. Thus, the interpretation is given as a probability. Therefore, this genetic information shall be interpreted in conjunction with other clinical findings and familial history for the administration of specific nutrients. Patients should receive appropriate genetic counseling to explain the implications of these test results. Details of assay performance and algorithms leading to clinical recommendations are available upon request. The analytical and performance characteristics of this laboratory developed test (LDT) were determined by GX Sciences' laboratory pursuant to Clinical Laboratory Improvement Amendments (CLIA) requirements.
CLIA #: 45D2144988 Laboratory Director: James Jacobson, PhD

DISCLAIMER:

This test was developed and its performance characteristics determined by GX Sciences. It has not been cleared or approved by the FDA. The laboratory is regulated under CLIA and qualified to perform high-complexity testing. This test is used for clinical purposes. It should not be regarded as investigational or for research. rsIDs for the alleles being tested were obtained from the dbSNP database (Build 142).

DISCLAIMER:

UND Result: If you have received the result Variant undetermined (UND) this indicates that we were not able to determine your carrier status based on your raw data. Please refer to the GX Sciences genetic knowledge database for more information: https://www.gxsciences.com/kb_results.asp

DISCLAIMER:

Report contents and report recommendations are created and approved by GX Sciences. Sole responsibility for the proper use of the information on the GX Sciences report rests with the user, or those professionals with whom the user may consult. Nutrigenomic Testing and Dietary Supplements are not "Designated Health Services" covered by Medicare or Medicaid and may not be reimbursed under any state or Federal health care program.

DISCLAIMER:

These products are not approved by the Food and Drug Administration and are not intended to diagnose, treat, cure or prevent disease. These recommendations are for report purposes only and an individual is not required to use such products. These are recommendations only and do not replace the advisement of your own healthcare practitioner.

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