IDgenetix ▸ PGxTesting

PATIENT SAMPLE REPORT #1

Laboratory Test Report

Patient Name:	Patient ID:	Age:	Sex at Birth:	DOB:
Last, First		28	Female	02/13/1996

Sample Type:	Date Collected:	Date Received:	Ordering Physician:	Castle ID:
Buccal Swab	03/04/2024	03/05/2024	TEST PHYSICIAN	

Test Ordered:	Indication:	Report Date:	Report Status:
NeuroIDgenetix 902	NeuroIDgenetix	03/07/2024	SAMPLE

PHARMACOGENETIC TESTING BASED TREATMENT GUIDANCE

Depression Drug Therapy Selection & Dosing Guidance

Use as Directed
Drug
desvenlafaxine (SNRI)
levomilnacipran (SNRI)
mirtazapine (NaSSA)
trazodone (SARI)
vilazodone (SRI)
quetiapine (SGA)

Use With Caution and/or Increased Monitoring	
Drug	**Dosing**
amitriptyline	Avoid use if clinically possible. Per CPIC guideline, avoid amitriptyline use (CYP2C19 RM, CYP2D6 PM). PubMedID: 27997040
desipramine	Avoid use if clinically possible. Per CPIC guideline, avoid tricyclic use due to potential for side effects (CYP2D6 PM). Consider alternative drug not metabolized by CYP2D6. If a TCA is warranted, consider a 50% reduction of recommended starting dose. Utilize therapeutic drug monitoring to guide dose adjustments. PubMedID: 27997040
doxepin	Avoid use if clinically possible. Per CPIC guideline, avoid doxepin use (CYP2C19 RM, CYP2D6 PM). PubMedID: 27997040
imipramine	Avoid use if clinically possible. Per CPIC guideline, avoid imipramine use (CYP2C19 RM, CYP2D6 PM). PubMedID: 27997040
nortriptyline	Avoid use if clinically possible. Per CPIC guideline, avoid tricyclic use due to potential for side effects (CYP2D6 PM). Consider alternative drug not metabolized by CYP2D6. If a TCA is warranted, consider a 50% reduction of recommended starting dose. Utilize therapeutic drug monitoring to guide dose adjustments. PubMedID: 27997040
fluvoxamine	Consider alternate drug with more predictable response. Identification of multiple genetic variants influencing metabolism or response confounds therapeutic assessment [CYP2D6,HTTLPR].
fluoxetine	Consider alternate drug with more predictable response. SLC6A4 HTTLPR S/S genotype is associated with decreased efficacy of SSRIs and atypical metabolism (CYP2D6 PM) with incompletely characterized effects on fluoxetine disposition.
paroxetine	Consider alternate drug with more predictable response. Identification of multiple genetic variants influencing metabolism or response confounds therapeutic assessment [CYP2D6,HTTLPR].
sertraline	Consider alternate drug with more predictable response. Identification of multiple genetic variants influencing metabolism or response confounds therapeutic assessment [CYP2C19,HTTLPR].
venlafaxine	Consider alternate drug with more predictable response. Per CPIC guideline for CYP2D6 PM, consider a clinically appropriate alternative antidepressant not predominantly metabolized by CYP2D6. PubMedID: 37032427
citalopram	Consider dose adjustment or alternate drug. Per CPIC guideline, if patient does not adequately respond to recommended maintenance dosing, consider titrating to a higher maintenance dose or switching to a clinically appropriate alternative antidepressant not predominantly metabolized by CYP2C19. Increased metabolism and lower plasma concentrations decrease the probability of clinical benefit (CYP2C19 RM), an effect compounded by the presence of the SLC6A4 HTTLPR S/S genotype associated with decreased efficacy of SSRIs. PubMedID: 37032427
▸▸ escitalopram	Consider dose adjustment or alternate drug. Per CPIC guideline, if patient does not adequately respond to recommended maintenance dosing, consider titrating to a higher maintenance dose or switching to a clinically appropriate alternative antidepressant not predominantly metabolized by CYP2C19. Increased metabolism and lower plasma concentrations decrease the probability of clinical benefit (CYP2C19 RM), an effect compounded by the presence of the SLC6A4 HTTLPR S/S genotype associated with decreased efficacy of SSRIs. PubMedID: 37032427
vortioxetine	Consider dose adjustment or alternate drug. Per CPIC guideline for CYP2D6 PM, initiate 50% of starting dose (e.g., 5mg) and titrate to the maximum recommended dose of 10mg or consider a clinically appropriate alternative antidepressant not predominantly metabolized by CYP2D6. PubMedID: 37032427
▸▸ aripiprazole	Consider dose adjustment or alternate drug. Use with caution: in CYP2D6 poor metabolizers dose should initially be reduced to one-half (50%) of the usual dose and then adjusted to achieve favorable response. The dose in CYP2D6 PM patients who are administered a strong CYP3A4 inhibitor should be reduced to one-quarter (25%) of the usual dose. (Drug Label)

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PHARMACOGENETIC TESTING BASED TREATMENT GUIDANCE

Depression Drug Therapy Selection & Dosing Guidance

Use as Directed
Drug

Use With Caution and/or Increased Monitoring	
Drug	Dosing
brexpiprazole	Consider dose adjustment or alternate drug. Use with caution: in CYP2D6 poor metabolizers dose should initially be reduced to one-half (50%) of the usual dose and then adjusted to achieve favorable response. The dose in CYP2D6 PM patients who are administered a strong/moderate CYP3A4 inhibitor should be reduced to one-quarter (25%) of the usual dose. (Drug Label)
duloxetine *	Risk of metabolic interaction with tobacco, aripiprazole
bupropion *	Risk of metabolic interaction with aripiprazole

PHARMACOGENETIC TESTING BASED TREATMENT GUIDANCE

Bipolar Disorder Drug Therapy Selection & Dosing Guidance

Use as Directed
Drug
quetiapine (SGA)
cariprazine (SGA)
lurasidone (SGA)
paliperidone (SGA)
ziprasidone (SGA)
valproate (Anticonvulsant)
lithium (Mood Stabilizer)
lamotrigine (Anticonvulsant)

Use With Caution and/or Increased Monitoring	
Drug	Dosing
clozapine	Consider dose adjustment or alternate drug. While several studies have noted that CYP2D6 has a relatively minor contribution to clozapine metabolism, the drug label notes it may be necessary to reduce dose in CYP2D6 poor metabolizers. (CYP2D6 PM)
vortioxetine	Consider dose adjustment or alternate drug. Per CPIC guideline for CYP2D6 PM, initiate 50% of starting dose (e.g., 5mg) and titrate to the maximum recommended dose of 10mg or consider a clinically appropriate alternative antidepressant not predominantly metabolized by CYP2D6. PubMedID: 37032427
▸▸ **aripiprazole**	Consider dose adjustment or alternate drug. Use with caution: in CYP2D6 poor metabolizers dose should initially be reduced to one-half (50%) of the usual dose and then adjusted to achieve favorable response. The dose in CYP2D6 PM patients who are administered a strong CYP3A4 inhibitor should be reduced to one-quarter (25%) of the usual dose. (Drug Label)
iloperidone	Consider dose adjustment or alternate drug. Use with caution (CYP2D6 PM): decrease dose by 50% due to increased iloperidone exposure. (Drug Label)
risperidone	Consider dose adjustment or alternate drug. Use with caution & dose conservatively due to increased risk of toxicity or intolerance. (CYP2D6 PM)
asenapine *	Risk of metabolic interaction with tobacco
olanzapine *	Risk of metabolic interaction with tobacco
carbamazepine *	Risk of metabolic interaction with aripiprazole, escitalopram
oxcarbazepine *	Risk of metabolic interaction with aripiprazole, escitalopram

PHARMACOGENETIC TESTING BASED TREATMENT GUIDANCE

Anxiety Drug Therapy Selection & Dosing Guidance

Use as Directed
Drug
pregabalin (Anticonvulsant)
buspirone (Azapirone)
hydroxyzine (First Generation Antihistamine)
alprazolam (Benzodiazepine)
chlordiazepoxide (Benzodiazepine)
clonazepam (Benzodiazepine)

Use With Caution and/or Increased Monitoring	
Drug	Dosing
clomipramine	Avoid use if clinically possible. Per CPIC guideline, avoid clomipramine use (CYP2C19 RM, CYP2D6 PM). PubMedID: 27997040
fluvoxamine	Consider alternate drug with more predictable response. Identification of multiple genetic variants influencing metabolism or response confounds therapeutic assessment [CYP2D6,HTTLPR].

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PHARMACOGENETIC TESTING BASED TREATMENT GUIDANCE

Anxiety Drug Therapy Selection & Dosing Guidance

Use as Directed
Drug
lorazepam (Benzodiazepine)
oxazepam (Benzodiazepine)

Use With Caution and/or Increased Monitoring	
Drug	Dosing
fluoxetine	Consider alternate drug with more predictable response. SLC6A4 HTTLPR S/S genotype is associated with decreased efficacy of SSRIs and atypical metabolism (CYP2D6 PM) with incompletely characterized effects on fluoxetine disposition.
paroxetine	Consider alternate drug with more predictable response. Identification of multiple genetic variants influencing metabolism or response confounds therapeutic assessment [CYP2D6,HTTLPR].
sertraline	Consider alternate drug with more predictable response. Identification of multiple genetic variants influencing metabolism or response confounds therapeutic assessment [CYP2C19,HTTLPR].
venlafaxine	Consider alternate drug with more predictable response. Per CPIC guideline for CYP2D6 PM, consider a clinically appropriate alternative antidepressant not predominantly metabolized by CYP2D6. PubMedID: 37032427
citalopram	Consider dose adjustment or alternate drug. Per CPIC guideline, if patient does not adequately respond to recommended maintenance dosing, consider titrating to a higher maintenance dose or switching to a clinically appropriate alternative antidepressant not predominantly metabolized by CYP2C19. Increased metabolism and lower plasma concentrations decrease the probability of clinical benefit (CYP2C19 RM), an effect compounded by the presence of the SLC6A4 HTTLPR S/S genotype associated with decreased efficacy of SSRIs. PubMedID: 37032427
▸▸ escitalopram	Consider dose adjustment or alternate drug. Per CPIC guideline, if patient does not adequately respond to recommended maintenance dosing, consider titrating to a higher maintenance dose or switching to a clinically appropriate alternative antidepressant not predominantly metabolized by CYP2C19. Increased metabolism and lower plasma concentrations decrease the probability of clinical benefit (CYP2C19 RM), an effect compounded by the presence of the SLC6A4 HTTLPR S/S genotype associated with decreased efficacy of SSRIs. PubMedID: 37032427
diazepam	Consider dose adjustment or alternate drug. Use with caution & monitor therapeutically. Increased dose may be required for response. (CYP2C19 RM)
duloxetine	Risk of metabolic interaction with tobacco, aripiprazole

PHARMACOGENETIC TESTING BASED TREATMENT GUIDANCE

Psychosis Drug Therapy Selection & Dosing Guidance

Use as Directed
Drug
quetiapine (SGA)
cariprazine (SGA)
lurasidone (SGA)
paliperidone (SGA)
ziprasidone (SGA)
loxapine (First Generation Antipsychotic)

Use With Caution and/or Increased Monitoring	
Drug	Dosing
thioridazine	Avoid use if clinically possible. Use contraindicated in CYP2D6 PM. (Drug Label)
clozapine	Consider dose adjustment or alternate drug. While several studies have noted that CYP2D6 has a relatively minor contribution to clozapine metabolism, the drug label notes it may be necessary to reduce dose in CYP2D6 poor metabolizers. (CYP2D6 PM)
▸▸ aripiprazole	Consider dose adjustment or alternate drug. Use with caution: in CYP2D6 poor metabolizers dose should initially be reduced to one-half (50%) of the usual dose and then adjusted to achieve favorable response. The dose in CYP2D6 PM patients who are administered a strong CYP3A4 inhibitor should be reduced to one-quarter (25%) of the usual dose. (Drug Label)
brexpiprazole	Consider dose adjustment or alternate drug. Use with caution: in CYP2D6 poor metabolizers dose should initially be reduced to one-half (50%) of the usual dose and then adjusted to achieve favorable response. The dose in CYP2D6 PM patients who are administered a strong/moderate CYP3A4 inhibitor should be reduced to one-quarter (25%) of the usual dose. (Drug Label)

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PHARMACOGENETIC TESTING BASED TREATMENT GUIDANCE

Psychosis Drug Therapy Selection & Dosing Guidance

Use as Directed
Drug

Use With Caution and/or Increased Monitoring	
Drug	Dosing
iloperidone	Consider dose adjustment or alternate drug. Use with caution (CYP2D6 PM): decrease dose by 50% due to increased iloperidone exposure. (Drug Label)
risperidone	Consider dose adjustment or alternate drug. Use with caution & dose conservatively due to increased risk of toxicity or intolerance. (CYP2D6 PM)
chlorpromazine	Consider dose adjustment or alternate drug. Use with caution & dose conservatively due to increased risk of toxicity or intolerance. (CYP2D6 PM)
haloperidol	Consider dose adjustment or alternate drug. Per Dutch Pharmacogenetics Working Group Guideline, consider 50% dose reduction or select alternate drug. (CYP2D6 PM)
perphenazine	Consider dose adjustment or alternate drug. Use with caution (CYP2D6 PM): poor metabolizers demonstrate higher blood concentrations which may lead to side effects. (Drug Label)
asenapine *	Risk of metabolic interaction with tobacco
olanzapine *	Risk of metabolic interaction with tobacco

PHARMACOGENETIC TESTING BASED TREATMENT GUIDANCE

ADHD Drug Therapy Selection & Dosing Guidance

Use as Directed
Drug
dexmethylphenidate (Stimulant)
dextroamphetamine (Stimulant)
lisdexamfetamine (Stimulant)
clonidine (Sympatholytic)
guanfacine (Sympatholytic)

Use With Caution and/or Increased Monitoring	
Drug	Dosing
amphetamine	Consider dose adjustment or alternate drug. Use with caution & dose conservatively due to increased risk of toxicity or intolerance. (CYP2D6 PM)
atomoxetine	Consider dose adjustment or alternate drug. Higher rate of adverse events reported among CYP2D6 poor metabolizers. Refer to Drug Label for weight based dose adjustment guidance for CYP2D6 poor metabolizers.
methylphenidate	PGx association. Reports of decreased response in children with ADRA2A variant result.

PHARMACOGENETIC TESTING BASED TREATMENT GUIDANCE

Musculoskeletal Pain Drug Therapy Selection & Dosing Guidance

Use as Directed
Drug
buprenorphine (Opioid)
fentanyl (Opioid)
tapentadol (Opioid)
diclofenac (NSAID)
flurbiprofen (NSAID)
ibuprofen (NSAID)
indomethacin (NSAID)
mefenamic acid (NSAID)
meloxicam (NSAID)
naproxen (NSAID)
piroxicam (NSAID)

Use With Caution and/or Increased Monitoring	
Drug	Dosing
codeine #	Avoid use if clinically possible. Absent CYP2D6 activity (PM) greatly reduces codeine's effectiveness (CPIC Guideline PubMedID: 24458010) while an OPRM1 A/G variant may diminish opioid analgesic response.
hydrocodone	Consider alternate drug with more predictable response. Although some conflicting evidence exists, reduced CYP2D6 activity (PM) might reduce hydrocodone effectiveness (CPIC Guidelines PMID 24458010) while the OPRM1 A/G variant may increase susceptibility to side effects.
hydromorphone	Consider alternate drug with more predictable response. OPRM1 variant may lead to more opioid-related side effects from hydromorphone.
oxycodone	Consider alternate drug with more predictable response. OPRM1 A/G variant and absent CYP2D6 activity (PM) might both reduce oxycodone effectiveness.
tramadol #	Consider alternate drug with more predictable response. OPRM1 A/G variant and absent CYP2D6 activity (PM) might reduce tramadol effectiveness (CPIC Guideline PubMedID: 24458010).

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PHARMACOGENETIC TESTING BASED TREATMENT GUIDANCE

Musculoskeletal Pain Drug Therapy Selection & Dosing Guidance

Use as Directed	Use With Caution and/or Increased Monitoring	
Drug	Drug	Dosing
	morphine	Consider dose increase or alternate drug. OPRM1 A/G and COMT A/G variants may reduce morphine analgesic response.
	duloxetine *	Risk of metabolic interaction with tobacco, aripiprazole
	methadone *	Risk of metabolic interaction with aripiprazole
	celecoxib *	Risk of metabolic interaction with aripiprazole

PHARMACOGENETIC TESTING BASED TREATMENT GUIDANCE

Arthritis Drug Therapy Selection & Dosing Guidance

Use as Directed	Use With Caution and/or Increased Monitoring	
Drug	Drug	Dosing
diclofenac (NSAID)	celecoxib *	Risk of metabolic interaction with aripiprazole
flurbiprofen (NSAID)	hydroxychloroquine *	Risk of metabolic interaction with aripiprazole
ibuprofen (NSAID)		
indomethacin (NSAID)		
mefenamic acid (NSAID)		
meloxicam (NSAID)		
naproxen (NSAID)		
piroxicam (NSAID)		
azathioprine (DMARD)		
cyclophosphamide (DMARD)		
leflunomide (DMARD)		
methotrexate (DMARD)		
sulfasalazine (DMARD)		
abatacept (Biologic DMARD)		
adalimumab (Biologic DMARD)		
anakinra (Biologic DMARD)		
certolizumab (Biologic DMARD)		
etanercept (Biologic DMARD)		
golimumab (Biologic DMARD)		
infliximab (Biologic DMARD)		
rituximab (Biologic DMARD)		
tocilizumab (Biologic DMARD)		
tofacitinib (Biologic DMARD)		

PHARMACOGENETIC TESTING BASED TREATMENT GUIDANCE

Migraine Drug Therapy Selection & Dosing Guidance

Use as Directed	Use With Caution and/or Increased Monitoring	
Drug	Drug	Dosing
diclofenac (NSAID)	amitriptyline	Avoid use if clinically possible. Per CPIC guideline, avoid amitriptyline use (CYP2C19 RM, CYP2D6 PM). PubMedID: 27997040
flurbiprofen (NSAID)		
ibuprofen (NSAID)		
indomethacin (NSAID)		

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PHARMACOGENETIC TESTING BASED TREATMENT GUIDANCE

Migraine Drug Therapy Selection & Dosing Guidance

Use as Directed
Drug
mefenamic acid (NSAID)
meloxicam (NSAID)
naproxen (NSAID)
piroxicam (NSAID)
almotriptan (Triptan)
eletriptan (Triptan)
frovatriptan (Triptan)
naratriptan (Triptan)
rizatriptan (Triptan)
sumatriptan (Triptan)
caffeine & ergotamine (ergot derivative)
gabapentin (Anticonvulsant)
valproate (Anticonvulsant)

Use With Caution and/or Increased Monitoring	
Drug	Dosing
desipramine	Avoid use if clinically possible. Per CPIC guideline, avoid tricyclic use due to potential for side effects (CYP2D6 PM). Consider alternative drug not metabolized by CYP2D6. If a TCA is warranted, consider a 50% reduction of recommended starting dose. Utilize therapeutic drug monitoring to guide dose adjustments. PubMedID: 27997040
doxepin	Avoid use if clinically possible. Per CPIC guideline, avoid doxepin use (CYP2C19 RM, CYP2D6 PM). PubMedID: 27997040
imipramine	Avoid use if clinically possible. Per CPIC guideline, avoid imipramine use (CYP2C19 RM, CYP2D6 PM). PubMedID: 27997040
nortriptyline	Avoid use if clinically possible. Per CPIC guideline, avoid tricyclic use due to potential for side effects (CYP2D6 PM). Consider alternative drug not metabolized by CYP2D6. If a TCA is warranted, consider a 50% reduction of recommended starting dose. Utilize therapeutic drug monitoring to guide dose adjustments. PubMedID: 27997040
zolmitriptan *	Risk of metabolic interaction with tobacco
propranolol *	Risk of metabolic interaction with tobacco
celecoxib *	Risk of metabolic interaction with aripiprazole
topiramate *	Risk of metabolic interaction with aripiprazole

PHARMACOGENETIC TESTING BASED TREATMENT GUIDANCE

Neuropathic Pain Drug Therapy Selection & Dosing Guidance

Use as Directed
Drug
pregabalin (Anticonvulsant)
diclofenac (NSAID)
flurbiprofen (NSAID)
ibuprofen (NSAID)
indomethacin (NSAID)
mefenamic acid (NSAID)
meloxicam (NSAID)
naproxen (NSAID)
piroxicam (NSAID)
gabapentin (Anticonvulsant)
milnacipran (SNRI)

Use With Caution and/or Increased Monitoring	
Drug	Dosing
amitriptyline	Avoid use if clinically possible. Per CPIC guideline, avoid amitriptyline use (CYP2C19 RM, CYP2D6 PM). PubMedID: 27997040
desipramine	Avoid use if clinically possible. Per CPIC guideline, avoid tricyclic use due to potential for side effects (CYP2D6 PM). Consider alternative drug not metabolized by CYP2D6. If a TCA is warranted, consider a 50% reduction of recommended starting dose. Utilize therapeutic drug monitoring to guide dose adjustments. PubMedID: 27997040
doxepin	Avoid use if clinically possible. Per CPIC guideline, avoid doxepin use (CYP2C19 RM, CYP2D6 PM). PubMedID: 27997040
imipramine	Avoid use if clinically possible. Per CPIC guideline, avoid imipramine use (CYP2C19 RM, CYP2D6 PM). PubMedID: 27997040
nortriptyline	Avoid use if clinically possible. Per CPIC guideline, avoid tricyclic use due to potential for side effects (CYP2D6 PM). Consider alternative drug not metabolized by CYP2D6. If a TCA is warranted, consider a 50% reduction of recommended starting dose. Utilize therapeutic drug monitoring to guide dose adjustments. PubMedID: 27997040
carisoprodol	Consider dose adjustment or alternate drug. Use with caution & monitor therapeutically. Increased dose may be required for response. (CYP2C19 RM)
duloxetine *	Risk of metabolic interaction with tobacco, aripiprazole
celecoxib *	Risk of metabolic interaction with aripiprazole
carbamazepine *	Risk of metabolic interaction with aripiprazole, escitalopram

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PHARMACOGENETIC TESTING BASED TREATMENT GUIDANCE

Seizure Disorder Drug Therapy Selection & Dosing Guidance

Use as Directed
Drug
pregabalin (Anticonvulsant)
clonazepam (Benzodiazepine)
gabapentin (Anticonvulsant)
valproate (Anticonvulsant)
lamotrigine (Anticonvulsant)
ethosuximide (Anticonvulsant)
ethotoin (Anticonvulsant)
ezogabine (Anticonvulsant)
lacosamide (Anticonvulsant)
levetiracetam (Anticonvulsant)
lorazepam (Anticonvulsant)
pentobarbital (Anticonvulsant)
perampanel (Anticonvulsant)
rufinamide (Anticonvulsant)
tiagabine (Anticonvulsant)
vigabatrin (Anticonvulsant)
zonisamide (Anticonvulsant)

Use With Caution and/or Increased Monitoring	
Drug	**Dosing**
diazepam	Consider dose adjustment or alternate drug. Use with caution & monitor therapeutically. Increased dose may be required for response. (CYP2C19 RM)
clobazam	Consider dose adjustment or alternate drug. Use with caution & monitor therapeutically. Increased dose may be required for response. (CYP2C19 RM)
fosphenytoin	Consider dose adjustment or alternate drug. Use with caution & monitor therapeutically. Increased dose may be required for response. (CYP2C19 RM)
methsuximide	Consider dose adjustment or alternate drug. Use with caution & monitor therapeutically. Increased dose may be required for response. (CYP2C19 RM)
phenobarbital	Consider dose adjustment or alternate drug. Use with caution & monitor therapeutically. Increased dose may be required for response. (CYP2C19 RM)
phenytoin	Consider dose adjustment or alternate drug. Use with caution & monitor therapeutically. Increased dose may be required for response. (CYP2C19 RM)
primidone	Consider dose adjustment or alternate drug. Use with caution & monitor therapeutically. Increased dose may be required for response. (CYP2C19 RM)
topiramate*	Risk of metabolic interaction with aripiprazole
carbamazepine*	Risk of metabolic interaction with aripiprazole, escitalopram
oxcarbazepine*	Risk of metabolic interaction with aripiprazole, escitalopram
eslicarbazepine*	Risk of metabolic interaction with aripiprazole, escitalopram
felbamate*	Risk of metabolic interaction with escitalopram

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LABORATORY RESULTS AND PHARMACOGENETIC TEST ANALYSIS

Gene	Star Allele Genotype/Diplotype	Metabolizer Phenotype PM/IM/NM/RM/UM	Clinically Significant
ABCB1 [NM_000927.4:c.3435C>T]	T/T	N/A	No
ADRA2A -1291C>G [NM_000681.3:c.-1252G>C]	C/C	N/A	Yes
COMT [NM_000754.3:c.472G>A]	A/G	N/A	Yes
CYP1A2	*1/*1	NM	No
CYP2C19	*1/*17	RM	Yes
CYP2C9	*1/*1	NM	No
CYP2D6	*4/*4	PM	Yes
CYP3A4	*1/*1	NM	No
CYP3A5	*1/*3	IM	Yes
HTR2A [NM_000621.4:c.-998G>A]	A/G	N/A	No
HTR2A [NM_000621.4:c.614-2211T>C]	C/T	N/A	No
HTR2C [NM_000868.2:c.-697G>C]	C/G	N/A	No
HTR2C [NM_000868.2:c.-759C>T]	C/T	N/A	No
HTR2C [NM_000868.2:c.68G>C]	G/G	N/A	No
MTHFR A1298C [NM_005957.3:c.1286A>C]	A/C	N/A	No
MTHFR C677T [NM_005957.3:c.665C>T]	C/T	N/A	No
NAT2	*4/*6	IA	No
OPRM1 [NM_000914.3:c.118A>G]	A/G	N/A	Yes
SLC6A4 5-HTTLPR	Short/Short	N/A	Yes
SLC6A4 [NM_001045.4:c.-1760C>T]	C/C	N/A	No

Laboratory Director:	Report Approver:	Report Approval Date:	*** Electronic Signature On file ***

Patient Name:	Patient ID:	Age:	Sex at Birth:	DOB:
Last, First		28	Female	02/13/1996

Sample Type:	Date Collected:	Date Received:	Ordering Physician:	Castle ID:
Buccal Swab	03/04/2024	03/05/2024	TEST PHYSICIAN	

Test Ordered:	Indication:	Report Date:	Report Status:
NeuroIDgenetix 902	NeuroIDgenetix	03/07/2024	SAMPLE

SUMMARY & COMMENTS

Patient has one or more variant alleles present among the gene(s) analyzed.

The medications listed in the "Use as Directed" column in the table above are either not metabolized, or their metabolism and mechanism of action is believed to not be impacted by the genetic variants detected and therefore can be used as indicated in their package inserts.

Medications listed in the "Use with Caution and/or Increased Monitoring" are either metabolized inadequately or their mechanism of action is potentially impacted by the genetic variants detected.

UM: Ultra-rapid Metabolizer; RM: Rapid Metabolizer; NM: Normal Metabolizer; IM: Intermediate Metabolizer; PM: Poor Metabolizer; RA: Rapid Acetylator; IA: Intermediate Acetylator; SA: Slow Acetylator; N/A: metabolizer phenotype not applicable to pharmacodynamic genes

MTHFR C677T genotype: C/T; A1298C genotype: A/C. MTHFR genotype (one copy of the C677T mutation and one copy of the A1298C mutation) is associated with low enzyme activity.

►► Symbol indicates inclusion on the patient's medication list at the time of testing.

* Drug-Drug interactions.

CYP-activated prodrug.

METHODS & LIMITATIONS

DNA is isolated from the sample and tested for the presence or absence of allelic variants in the genes listed in the Laboratory Results section of this report. The genes are amplified enzymatically and subjected to a multiplex allele-specific fluorescence detection method. The most clinically relevant loci are analyzed for each gene. The results of this analysis are highly accurate, however, false positive or negative results may occur for reasons that include rare sequence variations, interfering substances present in the sample, or sample contamination. This assay panel does not test for all possible mutations that may be found in the genes indicated. Mutations in other genes and other non-genetic factors that may affect drug metabolism (e.g. drug-drug interactions other than CYP inhibitors and inducers) are not detected by this assay.

Consumption of alcoholic beverages may cause drug-drug interactions not reported on the IDgenetix test results. Some medications on the IDgenetix report may have pharmacodynamic or pharmacokinetic drug-drug interactions with alcohol and should be avoided. Clinicians should use their own judgment in combination with all available information when determining if counseling about alcohol avoidance is appropriate for their patients.

Detection of genetic variants does not replace therapeutic drug monitoring or other appropriate clinical monitoring. Test interpretation is intended to assist pre-therapeutic dose selection. Relevant patient data as entered or omitted on the test requisition forms may alter metabolic phenotype and test interpretations on drug dosage.

The recommendations in this report are suggestions based upon current literature; specific clinical situations may warrant continued usage of specific drugs contrary to these suggestions. These test results should be considered in the context of other clinical criteria by a qualified health care provider. They are not intended to be used as the sole means for clinical diagnosis, patient management, or drug selection/dosing decisions.

This assay was developed and validated by Castle Biosciences for clinical use. It has not been cleared or approved by the US Food and Drug Administration. The FDA has determined that tests such as these do not require clearance or approval. Castle Biosciences is certified under the Clinical Laboratory Improvement Amendments of 1988 (CLIA-88) as qualified to perform high complexity clinical laboratory testing.

When applicable, a list of alleles tested is available upon request.

Laboratory Director:	Report Approver:	Report Approval Date:	*** Electronic Signature On file ***