

SPECIMEN DETAILS

BARCODE: 50000 SAMPLE ID: 50000 TYPE: SWAB COLLECTED: 31/Jan/2024 ORDERED BY DEMO, PHYSICIAN (4U HEALTH) GENERATED: 11/Mar/2024

This pharmacogenetic information is based on best evidence compiled from guidelines and databases including the FDA Table of Pharmacogenetic Associations, PharmGKB, Clinical Pharmacogenetics Implementation Consortium (CPIC) and Dutch Pharmacogenetics Working Group (DPWG).

Please refer to the Methods, Limitations, and Liability Disclaimer at the end of this report.

Current Medications Impacted In This Report

The medications listed below indicate the patient's **Current Medications** impacted in this report.

<u>Clonazepam</u>	Phenotype			Genetic Test	Results	Evidence Level			
Klonopin Pivotril	Intermediate meta	abolizer	CYP2C9	*1/*2	2 Case-control studies ¹³				
P	Implication:	CYP2C9 alle	eles indicate incre	ased risk of Clonaz	epam-related	falls			
TreatG☆ ReviewG☆									
<u>Diazepam</u>	Phenotype			Genetic Test	Results	Evidence Level			
Diastat	Rapid metabolizer		CYP2C19	*1/*17	7	FDA PGx Table ³⁵			
Valium	Intermediate met	abolizer	CYP2C9	*1/*2		Case-control studies ¹³			
TreatG	Implication:	CYP2C9 alle	eles indicate incre	ased risk of Diazepa	am-related fa	lls			
ReviewGx		CYP2C19 a	lleles do not indic	ate changes from r	ecommended	dose			
<u>Escitalopram</u>	Phenotype			Genetic Test	Results	Evidence Level			
Cipralex Lexapro	Rapid metabolizer		CYP2C19	*1/*17	7	CPIC A ¹⁵ ;FDA PGx Table ³⁵			
TreatGx	Implication:	CYP2C19 ra less active o	apid metabolizer: compounds	increased metaboli	ism of Escitalo	opram to			
ReviewGx	Lower plasma concentrations of active drug may reduce response								
	2	Consider an CYP2C19	alternative drug	not predominantly	metabolized l	by			
<u>Tamoxifen</u>	Phenotype			Genetic Test	Results	Evidence Level			
Nolvadex Soltamox	Ultrarapid metabo	lizer	CYP2D6 (A Score)	activity (*1/*1	.)3N	CPIC A ¹¹ ;FDA PGx Table ³⁵			
KeviewOX	Implication:	CYP2D6 ultı endoxifen	rarapid metaboliz	zer: increased metabolism of Tamoxifen to					
		Strong CPIC recommendation for breast cancer therapy: Initiate therapy with recommended standard of care dosing. Avoid moderate and strong CYP2D6 inhibitors.							
		Recommen exaggerate 2021)	dation for condit d response with	ions other than brea pronounced adverse	ast cancer: Rie e effects (He o	sk of et al.,			
Warfarin	Phenotype			Genetic Test	Results	Evidence Level			
Coumadin Jantoven	Intermediate met	abolizer	CYP2C9	*1/*2		CPIC A ¹⁷ ;FDA PGx Table ³⁵			
TreatG≍ ReviewG≍	Increased respons	se	VKORC1	A/A		CPIC A ¹⁷ ;FDA PGx Table ³⁵			
ReviewG _%	Implication: 🛕	The algorith factors in ca	ım in TreatGx inc alculating initial w	ludes pharmacogen arfarin dose	etics and othe	Table ³⁵			

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<u>Atorvastatin</u>	Phenotype		Genetic Test	Results	Evidence Level		
Lipitor	Normal function	SLCO1B1	*1/*1	CPIC A ⁵ ;FDA PGx Table ³⁵			
TreatG🛪	Implication:	SLCO1B1 alleles indicate typ	ical exposure to Ato	rvastatin			
ReviewG %		Consider prescribing desired disease-specific guidelines	Consider prescribing desired starting dose and adjust based on disease-specific guidelines				
<u>Elagolix</u>	Phenotype		Genetic Test	Results	Evidence Level		
Orilissa	Normal function	SLCO1B1	*1/*1		FDA PGx Table ³⁵		
₽ ReviewG≍	Implication:	SLCO1B1 alleles indicate a ty	pical response to E	lagolix			
	* Other clinica response.	l factors, medical conditions ar	nd drug-drug interac	tions may co	Intribute to medication		
<u>Hydrocodone</u>	Phenotype		Genetic Test	Results	Evidence Level		
Hysingla Zohydro	Ultrarapid metab	olizer CYP2D6	lizer CYP2D6 (*1/*1)3N				
6 ₁ 19	Implication:	CYP2D6 ultrarapid metabolizer: minimal evidence for pharmacokinetic or clinical effect for Hydrocodone					
■ TreatG≭ ReviewG≭		No recommendation for Hyc regarding adverse events or recommendation").	lrocodone because analgesia (per CPIC	of minimal ev C``no	vidence		
Ibuprofen	Phenotype		Genetic Test	Results	Evidence Level		
Advil	Intermediate me	tabolizer (AS 1.5) CYP2C9 (S	tar Alleles) *1/*2		CPIC A ³²		
Caldolor Duexis Motrin IB NeoProfen	Implication:	CYP2C9 alleles do not indica	te changes from rec	commended	dose		
TreatG% ReviewG%							
<u>Meloxicam</u>	Phenotype		Genetic Test	Results	Evidence Level		
Anjeso Mobic	Intermediate me	tabolizer (AS 1.5) CYP2C9 (S	tar Alleles) *1/*2		CPIC A ³²		
Qmiiz ODT Vivlodex	Implication:	CYP2C9 alleles do not indica	te changes from rec	commended	dose		
କ _ା ୬							
TreatG% ReviewG%							



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Medication Summary Table

sk of nts See TreatGx for dose calculations	Medication with serious gene-drug interaction should be evaluated carefully and alternative medications obsuid be
sk of nts See TreatGx for dose calculations	interaction should be evaluated carefully and alternative medications
	aiven
	Amitriptyline Codeine Desipramine Imipramine Nortriptyline Tramadol
Fluvastatin Warfarin	
	Ondansetron
e n	Amitriptyline Clomipramine Desipramine Doxepin Imipramine Nortriptyline Paroxetine
	le n oxide

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Genetic Test Results For **DEMO PATIENT** 4UHEALTH | Vision Lab Director: Lekh Sharma, PhD, TC (NRCC) | 4U Health: PO Box 100083 Pittsburgh, PA 15233 866-610-1200 | help@4uhealth.com | www.4uhealth.com



NAME: DEMO PATIENT DOB: 31/Jan/2024 SEX AT BIRTH: Male

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	Mild or no known interaction	Moderate gene-drug interaction							
		Consider alternative medications	May require an increased dose	May require a reduced dose	Efficacy may be affected by genetics	Increased risk of adverse events	See TreatGx for dose calculations	interaction should be evaluated carefully and alternative medications should be	
						Chlorpromazine Clobazam Clonazepam Clorazepate Clozapine Diazepam Flupentixol Fluphenazine Flurazepam Haloperidol Iloperidone Lorazepam Loxapine Lurasidone Methotrimeprazine Molindone Nitrazepam Olanzapine Oxazepam Paliperidone Perphenazine Pimozide Prochlorperazine Promethazine Quetiapine Temazepam Thioridazine Triazolam Trifluoperazine Ziprasidone		T ^{rimi} pramine Zuclopenthixol	
Neurology	Brivaracetam Deutetrabenazine Donepezil Fosphenytoin Galantamine Phenytoin Propranolol Tetrabenazine Valbenazine	Metoprolol	Venlafaxine		Metoprolol Venlafaxine	Clobazam Clonazepam Diazepam		Amitriptyline Desipramine Nortriptyline	
Rheumatology	Celecoxib Flurbiprofen Ibuprofen Meloxicam								

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SPECIMEN DETAILS

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	Mild or no known interaction	Moderate gene-drug interaction Consider alternative medications	May require an increased dose	May require a reduced dose	Efficacy may be affected by genetics	Increased risk of adverse events	See TreatGx for dose calculations	Medication with serious gene-drug interaction should be evaluated carefully and alternative medications should be
	Piroxicam Tenoxicam							given
Urology	Darifenacin Fesoterodine Mirabegron Tamsulosin Tolterodine							
Other	Avatrombopag Cevimeline Elagolix Eltrombopag Flibanserin Lofexidine Oral contraceptives							Eliglustat



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Medication Summary

The Medication Summary is a list of medications with evidence for the use of pharmacogenetic information, organized by their therapeutic area. Medications are further organized based on drug-gene interactions. Health care providers should consider the information contained in the Medication Report before making any clinical or therapeutic decisions.



🛕 Moderate gene-drug interaction

Serious gene-drug interaction; should be evaluated carefully and alternative medications should be considered

Analyesia
A
Carisoprodol
Celecoxib
Flurbiprofen
Hydrocodone
Ibuprofen
Meloxicam
Piroxicam
Tenoxicam
2
Alfontanil
Allentarill

Fentanyl Morphine Venlafaxine

3

Amitriptyline Codeine Desipramine Imipramine Nortriptyline Tramadol

Autoimmune

Cyclosporine Siponimod Tacrolimus

raction; should be evaluate	ed carefully and a
Cancer	Gastroent
<u> </u>	2
Erdafitinib	Dronabinol
2	Lansoprazole
Tamoxifen	Meclizine
Cardiovascular	Omeprazole
A	Pantoprazole
Atorvastatin	3
Carvedilol	Ondansetron
Clopidogrel	Infection
Lovastatin	2
Nebivolol	Voriconazole
Pitavastatin	Mental Heal
Pravastatin	A ———
Propranolol	Amoxapine
Rosuvastatin	Amphetamine
Simvastatin	Aripiprazole la
A	Atomoxetine
Flecainide	Fluvoxamine
Fluvastatin	Protriptyline
Metoprolol	Vortioxetine
Propafenone	2
Wartarin	Alprazolam
Gastroenterology	Aripiprazole
<u> </u>	Asenapine
Metoclopramide	Brexpiprazole
2	Bromazepam

Dexlansoprazole

terology	Mental Health
	<u>A</u>
	Citalopram
	Clobazam
	Clonazepam
	Clorazepate
	Clozapine
	Diazepam
	Escitalopram
	Flupentixol
	Fluphenazine
	Flurazepam
	Haloperidol
th	Iloperidone
	Lorazepam
	Loxapine
2	Lurasidone
auroxil	Methotrimeprazine
	Molindone
	Nitrazepam
	Olanzapine
	Oxazepam
	Paliperidone
	Perphenazine
	Pimozide
	Prochlorperazine
2	Promethazine
1	Quetiapine
	Risperidone
xide	Sertraline
ine	Temazepam



Cariprazine

Chlordiazepo

Chlorpromazine



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...Mental Health

Thioridaz ine Triazolam Trifluoperaz ine Venlafax ine Ziprasido ne

Amitriptyline Clomipramine Desipramine Doxepin Imipramine Nortriptyline Paroxetine Trimipramine Zuclopenthixol

Neurology

Brivaracetam Deutetrabenazine Donepezil Fosphenytoin Galantamine Phenytoin Propranolol Tetrabenazine Valbenazine

2

Clobazam Clonazepam Diazepam Metoprolol Venlafaxine

3 -

Amitriptyline Desipramine

...Neurology

Nortriptyline Rheumatology

Celecoxib Flurbiprofen Ibuprofen Meloxicam Piroxicam Tenoxicam

Urology

Darifenacin Fesoterodine Mirabegron Tamsulosin Tolterodine

Other

Avatrombopag Cevimeline Elagolix Eltrombopag Flibanserin Lofexidine Oral contraceptives

Eliglustat

3 -





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Overview

This pharmacogenetic information is based on best evidence compiled from guidelines and databases including FDA, PharmGKB, Clinical Pharmacogenetics Implementation Consortium (CPIC) and Dutch Pharmacogenetics Working Group (DPWG).

This document includes:

1. Medication Summary: A list of medications organized by their therapeutic area of use and sorted based on their drug-gene interaction severity.

- 2. Medication Report: Provides information about factors affecting medication response.
- 3. Guidelines: A table of guidelines used to produce each interpretation.
- 4. References: Sources of information used to create this report.
- 5. Laboratory Report: Contains genetic test results in a technical table.

TreatGx and ReviewGx are clinical decision support tools that expand on the contents on this report.

TreatG

<u>TreatGx</u> is clinical decision support software for precision prescribing that identifies condition-specific medication options based on multiple patient factors. **R**eviewG_×

ReviewGx uses patient factors including pharmacogenetics to highlight medication safety issues, help optimize medications, and identify deprescribing opportunities.

Components of the Medication Report

For all medications, clinical factors, medical conditions, lab values, drug-gene and drug-drug interactions may contribute to medication response and should be evaluated for each patient. The kidney and liver icon notations are intended for informational purposes only. The patient's kidney/liver function are not used for the purposes of displaying this information, and the potential interactions for that specific medication may not apply. TreatGx and ReviewGx help integrate this information to support precision prescribing and comprehensive medication management. The final genotype/phenotype call is at the discretion of the laboratory director. Medication changes should only be initiated at the discretion of the patient's healthcare provider after a full assessment.

Example: Codeine Genetic Test Source/Evidence Phenotype Results **Generic Name** Poor metabolizer CYP2D6 *3/*6 CPIC A⁶; FDA PGx Codeine Contin Table ³⁵ Tylenol with Brand Names Codeine No. Implication: CYP2D6 poor metabolizer: greatly reduced metabolism of 2/3/4 Codeine may result in decreased response 6,9 Potential Kidnev Avoid Codeine use or Liver Interaction TreatG₂ **ReviewG**_×

Source/Evidence for Drug-Gene Interactions:

For each medication, a source is listed for each drug-gene interaction. This report prioritizes guidance from CPIC if the drug-gene pair is assigned a CPIC Level of A or B. This is the threshold that CPIC defines as having sufficient evidence for at least one prescribing action to be recommended. See <u>cpicpgx.org/prioritization</u> for a full explanation of CPIC Levels for Genes/Drugs.

Pharmacogenetic information from FDA-approved drug labels or the FDA Table of Pharmacogenetic Associations (<u>https://www.fda.gov/medical-devices/precision-medicine/table-pharmacogenetic-associations</u>) is included when available.

If there is no CPIC guideline (level A or B) or FDA guidance, other sources may be referenced, such as DPWG guidelines, PharmGKB clinical annotations, and in some instances, clinical studies. See <u>https://www.pharmgkb.org/page/clinAnnLevels</u> for a full explanation of PharmGKB levels of evidence. Use of any of this information is at the discretion of the health professional.

* Other clinical factors, medical conditions and drug-drug interactions may contribute to medication response.

Medication Report

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The Medication Report provides information on how pharmacogenetic results affect each medication.

Use TreatGx and ReviewGx to explore personalized medication treatment options, dosing information and medication optimization.

Alfentanil	Phenotype		Genetic Test	Results	Source/Evidence		
Alfenta	Reduced response	9	OPRM1 rs1799971	G/G	PharmGKB 3		
ReviewGx	Implication:	OPRM1 alleles	indicate a reduced resp	ponse to Alfentanil			
Alprazolam	Phenotype		Genetic Test	Results	Source/Evidence		
Xanax	Intermediate met	abolizer	CYP2C9	*1/*2	Case-control studies ¹³		
••	Implication:	CYP2C9 alleles	s indicate increased risk	c of Alprazolam-rela	ted falls		
ReviewGჯ							
Amitriptyline	Phenotype		Genetic Test	Results	Source/Evidence		
Elavil Levate	Ultrarapid metabo	lizer	CYP2D6	(*1/*1)3N	CPIC A ¹⁶ ;FDA PGx Table ³⁵		
TreatGx	Rapid metabolizer		CYP2C19	*1/*17	CPIC A ¹⁶		
ReviewG %	Implication:	Implication: CYP2D6 ultrar to less active Lower plasma		rapid metabolizer: increased metabolism of Amitriptyline compounds a concentrations of active drug may reduce response			
		CYP2C19 rapion may affect res	id metabolizer: increased metabolism of Amitriptyline sponse or adverse drug reactions				
	3	Avoid Amitript TreatGx for all	yline use (per CPIC opt ternatives and specific	ional recommendat dosing recommenda	ion). Refer to ations.		
Amoxapine	Phenotype		Genetic Test	Results	Source/Evidence		
ReviewG _%	Ultrarapid metabo	lizer	CYP2D6	(*1/*1)3N	FDA PGx Table ³⁵		
	Implication:	CYP2D6 alleles	s do not indicate chang	es from recommen	ded dose		
Amphetamine	Phenotype		Genetic Test	Results	Source/Evidence		
Adzenys	Ultrarapid metabo	lizer	CYP2D6	(*1/*1)3N	FDA PGx Table ³⁵		
TreatGx ReviewGx	Implication:	CYP2D6 alleles	s do not indicate chang	es from recommen	ded dose		
Aripiprazole	Phenotype		Genetic Test	Results	Source/Evidence		
Abilify Aristada	Ultrarapid metabo	lizer	CYP2D6	(*1/*1)3N	DPWG (PharmGKB		
TreatGx ReviewGx	Increased risk of adverse drug reactions		ANKK1/DRD2 rs1800497	G/G	PharmGKB 3		
	Implication:	ANKK1 alleles	indicate an increased ri	isk of tardive dyskin	esia		
		CYP2D6 alleles	s do not indicate chang	es from recommen	ded dose		
Aripiprazole lauroxil	Phenotype		Genetic Test	Results	Source/Evidence		
Aristada	Ultrarapid metabo	lizer	CYP2D6	(*1/*1)3N	FDA PGx Table ³⁵		
ReviewG🛪	Implication:	CYP2D6 alleles	s do not indicate chang	es from recommen	ded dose		



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Asenapine	Phenotype		Genetic Test	Results	Source/Evidence		
Saphris	Increased risk of adverse drug reactions		ANKK1/DRD2 rs1800497	G/G	PharmGKB 3		
TreatGx ReviewGx	Implication:	ANKK1 alleles	indicate an increased r	isk of tardive dyskin	esia		
Atomoxetine	Phenotype		Genetic Test	Results	Source/Evidence		
Strattera	Ultrarapid metabo	lizer	CYP2D6 (Activity Score)	(*1/*1)3N	CPIC A ⁴ ;FDA PGx Table ³⁵		
TreatG % ReviewG%	Implication:	CYP2D6 allele	s do not indicate chang	ges from recommen	ded dose		
Atorvastatin	Phenotype		Genetic Test	Results	Source/Evidence		
Lipitor	Normal function		SLCO1B1	*1/*1	CPIC A ⁵ ;FDA PGx Table ³⁵		
TreatGx	Implication:	SLCO1B1 alle	es indicate typical expo	osure to Atorvastati	n		
ReviewG %		Consider pres disease-specif	cribing desired starting īc guidelines	dose and adjust bas	sed on		
Avatrombopag	Phenotype		Genetic Test	Results	Source/Evidence		
Doptelet	Intermediate met	abolizer	CYP2C9	*1/*2	FDA PGx Table ³⁵		
		There is a potential impact on pharmacokinetic properties. The impact of CYP2C9 variants on the safety of Avatrombopag has not been established.					
Brexpiprazole	Phenotype		Genetic Test	Results	Source/Evidence		
Rexulti	Ultrarapid metabo	lizer	CYP2D6	(*1/*1)3N	DPWG ⁸ ;FDA PGx		
er Pr	Increased risk of a reactions	adverse drug	ANKK1/DRD2 rs1800497	G/G	Table ⁵³ PharmGKB 3		
TreatGx	Implication:	ANKK1 alleles indicate an increased risk of tardive dyskinesia					
ReviewGx		CYP2D6 allele	s do not indicate chang	ges from recommen	ded dose		
Brivaracetam	Phenotype		Genetic Test	Results	Source/Evidence		
Briviact	Rapid metabolizer	•	CYP2C19	*1/*17	FDA PGx Table ³⁵		
Griviera € ₁ ∂	Implication:	CYP2C19 allel	es do not indicate chai	nges from recomme	nded dose		
ReviewG %							
Bromazepam	Phenotype		Genetic Test	Results	Source/Evidence		
e,	Intermediate met	abolizer	CYP2C9	*1/*2	Case-control studies ¹³		
ReviewG %	Implication:	CYP2C9 allele	s indicate increased ris	k of Bromazepam-re	elated falls		



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Cariprazine	Phenotype		Genetic Test	Results	Source/Evidence			
Vraylar Sirð	Increased risk o reactions	f adverse drug	ANKK1/DRD2 rs1800497	G/G	PharmGKB 3			
	Implication:	ANKK1 alleles	indicate an increased	risk of tardive dyskin	nesia			
TreatGx ReviewGx								
Carisoprodol	Phenotype		Genetic Test	Results	Source/Evidence			
ReviewGx	Rapid metaboliz	er	CYP2C19	*1/*17	FDA PGx Table ³⁵			
	Implication:	CYP2C19 allel	es do not indicate cha	inges from recomme	ended dose			
Carvedilol	Phenotype		Genetic Test	Results	Source/Evidence			
Coreg	Ultrarapid metal	olizer	CYP2D6	(*1/*1)3N	FDA PGx Table ³⁵			
••	Implication:	CYP2D6 allele	s do not indicate chan	iges from recommen	ded dose			
TreatG☆ ReviewG☆								
Celecoxib	Phenotype		Genetic Test	Results	Source/Evidence			
Celebrex	Intermediate me	etabolizer (AS 1.	5) CYP2C9 (Star Alle	les) *1/*2	CPIC A ³² ;FDA PGx Table ³⁵			
	Implication:	CYP2C9 allele	s do not indicate chan	ges from recommen	ided dose			
TreatGx ReviewGx								
Cevimeline	Phenotype		Genetic Test	Results	Source/Evidence			
Evoxac	Ultrarapid metal	olizer	CYP2D6	(*1/*1)3N	FDA PGx Table ³⁵			
ReviewGx	Implication:	CYP2D6 allele	s do not indicate chan	iges from recommen	ded dose			
Chlordiazepoxide	Phenotype		Genetic Test	Results	Source/Evidence			
Librium	Intermediate me	etabolizer	CYP2C9	*1/*2	Case-control studies ¹³			
ReviewGx	Implication:	CYP2C9 allele	s indicate increased ris	sk of Chlordiazepoxid	le-related falls			
Chlorpromazine	Phenotype		Genetic Test	Results	Source/Evidence			
TreatGx ReviewG*	Increased risk of reactions	f adverse drug	ANKK1/DRD2 rs1800497	G/G	PharmGKB 3			
KeviewGA	Implication:	ANKK1 alleles	indicate an increased risk of tardive dyskinesia					
Citalopram	Phenotype		Genetic Test	Results	Source/Evidence			
Celexa	Rapid metaboliz	er	CYP2C19	*1/*17	CPIC A ¹⁵ ;FDA PGx			
TreatGx	Implication:	CYP2C19 rapi less active co	Table ³⁵ d metabolizer: increased metabolism of Citalopram to mpounds					
KeviewGX		Lower plasma	concentrations of ac	tive drug may reduce	e response			
		Consider an a CYP2C19	Lower plasma concentrations of active drug may reduce response Consider an alternative drug not predominantly metabolized by CYP2C19					



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Clobazam	Phenotype		Genetic Test	Results	Source/Evidence		
Onfi	Rapid metaboliz	er	CYP2C19	*1/*17	FDA PGx Table ³⁵		
Sympazan	Intermediate m	etabolizer	CYP2C9	*1/*2	Case-control studies ¹³		
	Implication:	CYP2C9 allele	s indicate increased ri	sk of Clobazam-relat	ed falls		
KeviewGx							
Clomipramine	Phenotype		Genetic Test	Results	Source/Evidence		
Anafranil ReviewG%	Ultrarapid metal	polizer	CYP2D6	(*1/*1)3N	CPIC B ¹⁶ ;FDA PGx Table ³⁵		
	Rapid metaboliz	er	CYP2C19	*1/*17	CPIC B ¹⁶		
	Implication:	CYP2D6 ultrar to less active Lower plasma	apid metabolizer: inc compounds concentrations of ac	reased metabolism o tive drug may reduce	f Clomipramine e response		
		CYP2C19 rapi may affect re	d metabolizer: increa sponse or adverse dr	sed metabolism of Cl ug reactions	omipramine		
		Avoid Clomipr to TreatGx for	amine use (per CPIC r alternatives and spe	optional recommenda cific dosing recomme	ation). Refer ndations.		
Clonazepam	Phenotype		Genetic Test	Results	Source/Evidence		
Klonopin	Intermediate m	etabolizer	CYP2C9	*1/*2	Case-control studies ¹³		
Rivotril	Implication:	CYP2C9 allele	les indicate increased risk of Clonazepam-related falls				
■ TreatG× ReviewG×							
Clopidogrel	Phenotype		Genetic Test	Results	Source/Evidence		
Plavix TreatG%	Rapid metaboliz	er	CYP2C19	*1/*17	CPIC A ²⁰ ;FDA PGx Table ³⁵		
ReviewG ≭	Implication:	CYP2C19 allel	es do not indicate cha	anges from recomme	nded dose		
Clorazepate	Phenotype		Genetic Test	Results	Source/Evidence		
Gen-Xene	Intermediate m	etabolizer	CYP2C9	*1/*2	Case-control studies ¹³		
Tranxene ReviewG%	Implication:	CYP2C9 allele	s indicate increased risk of Clorazepate-related falls				
Clozapine	Phenotype		Genetic Test	Results	Source/Evidence		
Clozaril	Ultrarapid metal	polizer	CYP2D6	(*1/*1)3N	FDA PGx Table ³⁵		
Fazaclo ODT Versacloz	Increased risk o reactions	f adverse drug	ANKK1/DRD2 rs1800497	G/G	PharmGKB 3		
IreatG%	Implication:	ANKK1 alleles	s indicate an increased risk of tardive dyskinesia es do not indicate changes from recommended dose				
ХОмылач		CYP2D6 allele					
Codeine	Phenotype		Genetic Test	Results	Source/Evidence		
Codeine Contin Tylenol with Codeine	Ultrarapid meta	polizer	CYP2D6	(*1/*1)3N	CPIC A ⁶ ;FDA PGx Table ³⁵		
No. 2/3/4 €µ●	Implication:	CYP2D6 ultrar active metabo	rapid metabolizer: inc blite may increase the	reased metabolism o risk of toxicity	f Codeine to		
P Troat Geo		Avoid Codeine warranted, co	e use due to potential Insider an opioid othe	for serious toxicity. I r than tramadol or co	f opioid use is deine (per		

TreatGx ReviewGx

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CPIC strong recommendation). Refer to TreatGx for alternatives and

specific dosing recommendations.



SPECIMEN DETAILS

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Cyclosporine	Phenotype		Genetic Test	Results	Source/Evidence
Neoral	Poor metabolizer		CYP3A5	*3/*3	PharmGKB 3
Sandimmune ReviewG%	Implication:	CYP3A5 a	lleles do not indicate char	nges from recommen	ded dose
Darifenacin	Phenotype		Genetic Test	Results	Source/Evidence
Enablex	Ultrarapid metabo	lizer	CYP2D6	(*1/*1)3N	FDA PGx Table ³⁵
₽ TreatGx	Implication:	CYP2D6 a	lleles do not indicate char	nges from recommen	ded dose
ReviewG🛪					
Desipramine	Phenotype		Genetic Test	Results	Source/Evidence
Norpramin TreatG≭	Ultrarapid metabo	lizer	CYP2D6	(*1/*1)3N	CPIC B ¹⁶ ;FDA PGx Table ³⁵
ReviewG ჯ	Implication:	CYP2D6 u to less act Lower plas	ltrarapid metabolizer: inc ive compounds sma concentrations of ac	reased metabolism of tive drug may reduce	f Desipramine response
		Avoid Des alternative consider t metaboliz for alterna	ipramine use due to pote drug not metabolized by itrating to a higher target ers) – per CPIC optional itives and specific dosing	ntial lack of efficacy. (/ CYP2D6. If use is wa dose (compared to r recommendation. Ref recommendations.	Consider arranted, normal er to TreatGx
Deutetrabenazine	Phenotype		Genetic Test	Results	Source/Evidence
Austedo	Ultrarapid metabo	lizer	CYP2D6	(*1/*1)3N	FDA PGx Table ³⁵
, •	Implication:	CYP2D6 a	lleles do not indicate char	nges from recommen	ded dose
ReviewG %					
Dexlansoprazole	Phenotype		Genetic Test	Results	Source/Evidence
Dexilant	Rapid metabolizer		CYP2C19	*1/*17	CPIC A ²² ;FDA PGx Table ³⁵
TreatGx	Implication:	Optional C	PIC recommendation: In	itiate standard startin	g daily dose.

Consider increasing dose by 50-100% of the standard dose for the treatment of Helicobacter pylori infection and erosive esophagitis.

Diazepam	Phenotype		Genetic Test	Results	Source/Evidence
Diastat	Rapid metabolize	r	CYP2C19	*1/*17	FDA PGx Table ³⁵
Valium	Intermediate me	tabolizer	CYP2C9	*1/*2	Case-control studies ¹³
T IC	Implication:	CYP2C9 alleles i	ndicate increased risk o	f Diazepam-related fa	alls
IreatG% ReviewG%		CYP2C19 alleles	do not indicate change	es from recommended	d dose

Donepezil	Phenotype		Genetic Test	Results	Source/Evidence		
Aricept	Ultrarapid meta	bolizer	CYP2D6	(*1/*1)3N	FDA PGx Table ³⁵		
TreatG× ReviewG×	Implication: CYP2D6 ultrari less active cor drug		ltrarapid metabolizer: inc compounds leads to low	reased metabolism o ver plasma concentra	f Donepezil to tions of active		
		There is a of CYP2D6 establishee	potential impact on phar 5 variants on the safety o d	ential impact on pharmacokinetic properties. The impact riants on the safety of Donepezil has not been			

ReviewG_×



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Doxepin	Phenotype		Genetic Test	Results	Source/Evidence		
Silenor Sinequan	Ultrarapid metaboliz	zer	CYP2D6	(*1/*1)3N	CPIC B ¹⁶ ;FDA PGx Table ³⁵		
•	Rapid metabolizer		CYP2C19	*1/*17	CPIC B ¹⁶		
TreatGx ReviewGx	Implication:	CYP2D6 ultrara ess active com _ower plasma c	pid metabolizer: increas pounds concentrations of active	sed metabolism o drug may reduce	f Doxepin to e response		
	(CYP2C19 rapid affect response	metabolizer: increased or adverse drug reaction	metabolism of Do ons	oxepin may		
		Avoid Doxepin (TreatGx for alte	use (per CPIC optional rnatives and specific do	recommendation) osing recommenda	. Refer to ations.		
Dronabinol	Phenotype		Genetic Test	Results	Source/Evidence		
Marinol	Intermediate metal	olizer	CYP2C9	*1/*2	FDA PGx Table ³⁵		
Syndros ReviewG%	Implication:	CYP2C9 interm to less active co	ediate metabolizer: red ompounds	uced metabolism	of Dronabinol		
	ł	Higher plasma o adverse drug re	concentrations of active actions	e drug may increas	se the risk of		
	A	This drug has ai monograph or l	an FDA therapeutic recommendation, refer to drug r FDA labelling for dosing recommendations				
Elagolix	Phenotype		Genetic Test	Results	Source/Evidence		
Orilissa	Normal function		SLCO1B1	*1/*1	FDA PGx Table ³⁵		
	Implication:	SLCO1B1 alleles	s indicate a typical resp	onse to Elagolix			
ReviewG [*]							
Eliglustat	Phenotype		Genetic Test	Results	Source/Evidence		
Cerdelga	Ultrarapid metaboliz	zer	CYP2D6	(*1/*1)3N	FDA PGx Table ³⁵		
€ ₁ Э ₽²	Implication:	CYP2D6 ultrara ess active com	pid metabolizer: increas pounds	sed metabolism o	f Eliglustat to		
₽ ReviewG*	I	_ower plasma o	oncentrations of active	drug may reduce	e response		
	3	Avoid Eliglustat	use				
		This drug has a monograph or l	n FDA therapeutic recor FDA labelling for dosing	nmendation, refe recommendation	r to drug s		
Eltrombopag	Phenotype		Genetic Test	Results	Source/Evidence		
Promacta Revolade	Typical risk of adver reactions	rse drug	Factor V rs6025	C/C	FDA monograph ²⁸		
P ReviewG	Typical risk of adver reactions	rse drug	Factor II rs1799963	G/G	PharmGKB 3		
	Implication:	F2 and F5 allele	s do not indicate chang	es from recomm	ended dose		
Erdafitinib	Phenotype		Genetic Test	Results	Source/Evidence		
Balversa	Intermediate metal	polizer	CYP2C9 (Star Alleles)	*1/*2	FDA PGx Table ³⁵		
ReviewGx	Implication:	Implication: CYP2C9 alleles		do not indicate changes from recommended dose			



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Escitalopram	Phenotype	Genetic Test	Results	Source/Evidence			
Cipralex Lexapro	Rapid metabolizer	CYP2C19	*1/*17	CPIC A ¹⁵ ;FDA PGx Table ³⁵			
₽ TreatGx	Implication:	CYP2C19 rapid metabolizer: increased metabolism of Escitalopram to ess active compounds					
ReviewG [*]	l	ower plasma concentrations of active	e drug may reduce	e response			
		Consider an alternative drug not predo CYP2C19	ominantly metabo	lized by			
Fentanyl	Phenotype	Genetic Test	Results	Source/Evidence			
Abstral	Reduced response	OPRM1 rs1799971	G/G	PharmGKB 3			
Entora Lazanda Subsys	Implication: (DPRM1 alleles indicate a reduced resp	onse to Fentanyl				
ReviewG %							
Fesoterodine	Phenotype	Genetic Test	Results	Source/Evidence			
Toviaz	Ultrarapid metaboliz	zer CYP2D6	(*1/*1)3N	FDA PGx Table ³⁵			
ReviewGx	Dhanahuna	Constin Test	Desults	Course (Fridence			
Flecalnide	Phenotype		Results	Source/Evidence			
lambocor	Ultrarapid metaboliz	zer CYP2D6	(*1/*1)3N	1A) ⁸			
€¶0 ₽₽	Implication:	CYP2D6 ultrarapid metabolizer: increa ess active compounds	ised metabolism c	of Flecainide to			
TreatGx	l	ower plasma concentrations of active	e drug may reduce	e response			
ReviewGx		Record electrocardiogram and monito alternative drug	r plasma concenti	ration or select			
Flibanserin	Phenotype	Genetic Test	Results	Source/Evidence			
Addyi	Rapid metabolizer	CYP2C19	*1/*17	FDA PGx Table ³⁵			
••	Implication:	CYP2C19 alleles do not indicate chang	es from recomme	ended dose			
ReviewGx							
Flupentixol	Phenotype	Genetic Test	Results	Source/Evidence			
Fluanxol	Increased risk of ad reactions	lverse drug ANKK1/DRD2 rs1800497	G/G	PharmGKB 3			
	Implication:	ANKK1 alleles indicate an increased ris	k of tardive dyskir	nesia			
■ TreatG _X							

ReviewG_×

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Fluphenazine	Phenotype		Genetic Test	Results	Source/Evidence			
Modecate	Increased risk o reactions	f adverse drug	ANKK1/DRD2 rs1800497	G/G	PharmGKB 3			
∽ TreatG∵	Implication:	ANKK1 alleles in	dicate an increased	risk of tardive dyskin	esia			
ReviewGx								
Flurazepam	Phenotype		Genetic Test	Results	Source/Evidence			
TreatG🛪	Intermediate me	etabolizer	CYP2C9	*1/*2	Case-control studies ¹³			
ReviewG🛪	Implication:	CYP2C9 alleles i	ndicate increased ris	k of Flurazepam-rela	ated falls			
Flurbiprofen	Phenotype		Genetic Test	Results	Source/Evidence			
Ansaid	Intermediate me	etabolizer (AS 1.5)	CYP2C9 (Star Alle	es) *1/*2	CPIC A ³² ;FDA PGx			
G _I J					Table ³⁵			
TreatGx	Implication:	CYP2C9 alleles	do not indicate chan	ges from recommen	ded dose			
ReviewG🛪								
Fluvastatin	Phenotype		Genetic Test	Results	Source/Evidence			
Lescol	Intermediate me	etabolizer	CYP2C9	*1/*2				
P *	Normal function		SLCO1B1	*1/*1	CPIC A^5			
TreatGx	Implication:	SI CO1B1 alleles	s indicate typical exp	osure to Fluvastatin				
ReviewG _%	•	CYP2C9 alleles indicate increased Fluvastatin exposure as compared						
	Ear specific CPIC desing recommendations refer to TreatCy							
		For specific CPI	_ aosing recommen	dations refer to Treat	CGX			
Fluvoxamine	Phenotype		Genetic Test	Results	Source/Evidence			
Luvox	Ultrarapid metal	polizer	CYP2D6	(*1/*1)3N	CPIC B ¹⁵ ;FDA PGx			
	Implication		de wetindiente eben		Table ³⁵			
TreatGx	Implication.	CTP2D6 alleles	s do not indicate changes from recommended dose					
ReviewGx								
Fosphenytoin	Phenotype		Genetic Test	Results	Source/Evidence			
Cerebyx	Intermediate me	etabolizer	CYP2C9	*1/*2	CPIC A ¹⁸			
G _I B	Implication:	CYP2C9 interme	ediate metabolizer w	ith an activity score	of 1.5: slightly			
P *		reduced metabo	olism of Fosphenyto	in to less active com	pounds;			
ReviewGx		nowever, this do	bes not appear to tr					
		CYP2C9 alleles	do not indicate chan	ges from recommen	ded dose			
Galantamine	Phenotype		Genetic Test	Results	Source/Evidence			
Razadyne	Ultrarapid metal	olizer	CYP2D6	(*1/*1)3N	FDA PGx Table ³⁵			
6 ₁ 9	Implication:	CYP2D6 alleles	do not indicate chan	aes from recommen	ded dose			
e '								
TreatG								
ReviewGx								
Haloperidol	Phenotype		Genetic Test	Results	Source/Evidence			
Haldol	Increased risk o	f adverse drug	ANKK1/DRD2	G/G	PharmGKB 3			
			131000497	wheely and the weather and the set				
Venewox	Implication: ANKK1 alleles indicate an increased risk of tardive dyskinesia							

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Hysingis Ultrarapid metabolizer CYP2D6 (*1/*1)3N CPIC B ⁶ Zohydro Implication: CYP2D6 ultrarapid metabolizer: minimal evidence for pharmacokinetic or clinical effect for hydrocodone No recommendation for Hydrocodone because of minimal evidence regarding adverse events or analgesia (per CPIC *no recommendation '). Ibuprofen Phenotype Genetic Test Results Source/Evidence Advi Intermediate metabolizer (AS 1.5) CYP2C9 (Star Alleks) *1/*2 CPIC A ³² Caldobr Implication: CYP2C9 alleles do not indicate changes from recommended dose Neorbroin #* ReviewGx: Itoperdone Phenotype Genetic Test Results Source/Evidence Fanapt Ultrarapid metabolizer CYP2D5 (*1/*1)3N FDA PGX Table ³⁵ Incraased risk of adverse drug ANKK1/DRD2 G/G PharmGKB 3 TreatG:x ReviewGx Implication: ANKK1/DRD2 G/G PharmGKB 3 TreatG:x ReviewGx Implication: ANKK1/DRD2 G/G PharmGKB 3 TreatG:x ReviewGx Implication: CYP2D6 (*1/*1)3N CPIC B ¹⁶ /FDA PGX ReviewG:x Impli	Hydrocodone	Phenotype	Source/Evidence						
601ydro Implication: CYP2D6 ultrarapid metabolizer: minimal evidence for pharmacokinetic or clinical effect for hydrocodone because of minimal evidence regarding adverse events or analgesia (per CPLC "no recommendation"). ReviewGx; No recommendation for Hydrocodone because of minimal evidence Implication: CYP2C9 (Star Alleles) *1/*2 CPLC ho Stabilor Intermediate metabolizer (AS 1.5) CYP2C9 (Star Alleles) *1/*2 CPLC A ³² Stabilor Implication: CYP2C9 alleles do not indicate changes from recommended dose Morrin IB Implication: CYP2C9 alleles do not indicate changes from recommended dose Noorhofen Pienotype Genetic Test Results Source/Evidence FreatGx Phenotype Genetic Test Results Source/Evidence FreatGx: ReviewGx; Iltrarapid metabolizer CYP2D6 (*1/*1)3N FDA FDA Table ³⁵ ReviewGx; Implication: ANKK1 alleles indicate changes from recommended dose CYP2D6 alleles do not indicate changes from recommended dose Implication: CYP2D6 alleles do not indicate changes from recommended dose CYP2D6 alleles do not indicate changes from recommended dose Implication: CYP2D6 ultrarapid metabolizer: increased metabolism of Imipramine to less active compounds Sou	Hysingla	Ultrarapid metabolizer		CYP2D6	(*1/*1)3N	CPIC B ⁶			
Implication: No recommendation for hydrocodone because of minimal evidence recommendation"). Insurgers ReviewG: Source/Evidence Description: Phenotype Genetic Test Results Source/Evidence Advit Intermediate metabolizer (AS 1.5) CYP2C9 (Star Alleles) *1/*2 CPIC A32 Composition: CYP2C9 alleles do not indicate changes from recommended dose More frequencies CPIC A32 More frequencies Ultrarapid metabolizer CYP2C9 alleles do not indicate changes from recommended dose Source/Evidence ServiewG: Ultrarapid metabolizer CYP2C9 (*1/13)N FDA PGX Table ³⁵ Implication: ANKK1 alleles indicate an increased risk of tardive dyskinesia CYP2D6 alleles do not indicate changes from recommended dose Implication: ANKK1 alleles indicate changes from recommended dose CYP2D6 alleles do not indicate changes from recommended dose Implication: ANKK1 alleles indicate changes from recommended dose CYP2D6 alleles do not indicate changes from recommended dose Implication: CYP2D6 ultrarapid metabolizer CYP2D6 (*1/13)N FDA PGX Table ³⁵ Treat GX: ReviewG: CYP2D6 ultrarapid metabolizer: increased metabolism of Impramine to less active compounds CYP2D6 ultrarapid m	Zohydro പ്രേ	Implication:	CYP2D6 ultrar or clinical effe	apid metabolizer: mir ct for Hydrocodone	imal evidence for pha	armacokinetic			
buprofen Phenotype Genetic Test Results Source/Evidence Advil Caldolor Duexis NeoProfen Intermediate metabolizer (AS 1.5) CYP2C9 (Star Alleles) *1/*2 CP(C A ³² Implication: CYP2C9 alleles do not indicate changes from recommended dose Implication: CYP2C9 alleles do not indicate changes from recommended dose Implication: CYP2C9 alleles do not indicate changes from recommended dose Source/Evidence Implication: CYP2C9 alleles do not indicate changes from recommended dose Source/Evidence Implication: CYP2D6 (*1/*1)3N FDA PGX Table ³⁵ TreatG:x ReviewG:x Implication: ANKK1 alleles indicate an increased risk of tardive dyskinesia CYP2D6 alleles do not indicate changes from recommended dose CYP2D6 alleles do not indicate changes from recommended dose Implication: ANKK1 alleles indicate changes from recommended dose CYP2D6 alleles do not indicate changes from recommended dose Implication: CYP2D6 alleles do not indicate changes from recommended dose Source/Evidence TorardG:x ReviewG:x Rapid metabolizer CYP2D6 (*1/*1)3N CPIC B ¹⁶ ; FDA PGX Table ³⁵ ReviewG:x Implication: CYP2D6 ultrarapid metabolizer: increased metabolism of Imipramine to less active compounds Lower plasma concene	₽ TreatGx ReviewGx		No recommendation for Hydrocodone because of minimal evidence regarding adverse events or analgesia (per CPIC "no recommendation").						
Advid Intermediate metabolizer (AS 1.5) CYP2C9 (Star Alleles) *1/*2 CPIC A ³² Coldobr Implication: CYP2C9 alleles do not indicate changes from recommended dose Motrin IB VeoProfen TreatGX: ReviewGX: Iboperidone Phenotype Genetic Test Results Source/Evidence FraatgX: Increased risk of adverse drug ANKK1/DRD2 G/G PharmGKB 3 TreatGX: ReviewGX: Implication: ANKK1/DRD2 G/G PharmGKB 3 TreatGX: ReviewGX: Implication: ANKK1 alleles indicate an increased risk of tardive dyskinesia CYP2D6 alleles do not indicate changes from recommended dose Imipramine Phenotype Genetic Test Results Source/Evidence ToreatGX: ReviewGX: Ultrarapid metabolizer CYP2D6 (*1/*1)3N CPIC B ¹⁶ ; FDA PGX TreatGX: ReviewGX: Rapid metabolizer CYP2D6 (*1/*1)3N CPIC B ¹⁶ ; FDA PGX TreatGX: ReviewGX: ReviewGX: CYP2D6 ultrarapid metabolizer: increased metabolism of Imipramine to less active compounds Lower plasma concentrations of active drug may reduce response CYP2C	Ibuprofen	Phenotype		Genetic Test	Results	Source/Evidence			
Caldolor Implication: CYP2C9 alleles do not indicate changes from recommended dose Motrin IB VepProfen Implication: CYP2C9 alleles do not indicate changes from recommended dose Motrin IB ReviewGx Experidone Phenotype Genetic Test Results Source/Evidence Fanapt Ultrarapid metabolizer CYP2D6 (*1/*1)3N FDA PGX Table ³⁵ Increased risk of adverse drug ANKK1/DRD2 G/G PharmGKB 3 reactions reactions rs1800497 Gradies TreatGX Implication: ANKK1 alleles indicate an increased risk of tardive dyskinesia CYP2D6 alleles do not indicate changes from recommended dose Experimente Implication: ANKK1 alleles indicate changes from recommended dose Implication: CYP2D6 alleles do not indicate changes from recommended dose Implication: CYP2D6 ultrarapid metabolizer: Creased metabolism TreatGX: ReviewGX: Rapid metabolizer CYP2D6 ReviewGX: Rapid metabolizer: Creased metabolism of Imipramine to less active compounds Lower plasma concentrations of active drug may reduce response CYP2C19 rapid metabolizer: Creased metabolism of Imipramine may affect response	Advil	Intermediate me	tabolizer (AS 1.	5) CYP2C9 (Star Alle	es) *1/*2	CPIC A ³²			
TreatG:: ReviewG: Iboperidone Phenotype Genetic Test Results Source/Evidence Fanapt Ultrarapid metabolizer CYP2D6 (*1/*1)3N FDA PGX Table ³⁵ Implication: ANKK1/DRD2 G/G PhanmGKB 3 reactions reactions ANKK1/DRD2 G/G PhanmGKB 3 reactions ANKK1 alleles indicate an increased risk of tardive dyskinesia CYP2D6 alleles do not indicate changes from recommended dose Implication: ANKK1 alleles indicate an increased risk of tardive dyskinesia CYP2D6 alleles do not indicate changes from recommended dose Impramine Phenotype Genetic Test Results Source/Evidence Torfanil Ultrarapid metabolizer CYP2D6 (*1/*1)3N CPIC B ¹⁶ ;FDA PGX TreatGx: Rapid metabolizer CYP2D5 (*1/*1)3N CPIC B ¹⁶ ;FDA PGX TreatGx: Rapid metabolizer CYP2D5 (*1/*1)3N CPIC B ¹⁶ ;FDA PGX affect response or adverse drug reactions CYP2D6 (*1/*1)3N reaction). CPIC B ¹⁶ ;FDA PGX TreatGX: Rapid metabolizer CYP2D5 ultrarapid metabolizer: increased metabolism of Imipramine to less active ecompounds Lowe	Caldolor Duexis Motrin IB NeoProfen S _I P	Implication:	CYP2C9 alleles	s do not indicate chan	ges from recommen	ded dose			
Bioperidone Phenotype Genetic Test Results Source/Evidence Fanapt Ultrarapid metabolizer CYP2D6 (*1/*1)3N FDA PGX Table ³⁵ TreatG:x ReviewG:x Implication: ANKK1/DRD2 G/G PharmGKB 3 TreatG:x ReviewG:x Implication: ANKK1 alleles indicate an increased risk of tardive dyskinesia CYP2D6 alleles do not indicate changes from recommended dose Impiramine Phenotype Genetic Test Results Source/Evidence Toffanil Ultrarapid metabolizer CYP2D6 (*1/*1)3N CPIC B ¹⁶ .FDA PGX TreatG:x Rapid metabolizer CYP2D6 (*1/*1)3N CPIC B ¹⁶ .FDA PGX TreatG:x Rapid metabolizer CYP2D6 (*1/*1)3N CPIC B ¹⁶ .FDA PGX TreatG:x Rapid metabolizer CYP2D6 ultrarapid metabolizer: increased metabolism of Imipramine to less active compounds Commendation. Refer to Trable ³⁵ . Lower plasma concentrations of active drug may reduce response CYP2C19 rapid metabolizer: increased metabolism of Imipramine may affect response or adverse drug reactions Avoid Imipramine use (per CPIC optional recommendation). Refer to TreatGx for alternatives and specific dosing recommendations. Implication: Moderate CPIC recom	TreatGx ReviewGx								
Fanapt Ultrarapid metabolizer CYP2D6 (*1/*1)3N FDA PGX Table ³⁵ Increased risk of adverse drug ANKK1/DRD2 G/G PharmGKB 3 ReviewGx Implication: ANKK1 alleles indicate an increased risk of tardive dyskinesia CYP2D6 alleles do not indicate changes from recommended dose Imipramine Phenotype Genetic Test Results Source/Evidence TreatG:x Rapid metabolizer CYP2D6 (*1/*1)3N CPIC B ¹⁶ ;FDA PGX Table ³⁵ Rapid metabolizer CYP2D6 (*1/*1)3N CPIC B ¹⁶ ;FDA PGX TreatG:x Rapid metabolizer CYP2D6 (*1/*1)3N CPIC B ¹⁶ ;FDA PGX Table ³⁵ Rapid metabolizer CYP2D6 (*1/*1)3N CPIC B ¹⁶ ;FDA PGX Implication: CYP2D6 ultrarapid metabolizer: increased metabolism of Imipramine to less active compounds Lower plasma concentrations of active drug may reduce response CYP2C19 rapid metabolizer: increased metabolism of Imipramine may affect response or adverse drug reactions Avoid Imipramine use (per CPIC optional recommendations. Avoid Imipramine use (per CPIC optional recommendations. Lansoprazole Phenotype Genetic Test Results Source/Evidence TreatG:x <t< td=""><td>Iloperidone</td><td>Phenotype</td><td></td><td>Genetic Test</td><td>Results</td><td>Source/Evidence</td></t<>	Iloperidone	Phenotype		Genetic Test	Results	Source/Evidence			
Increased risk of adverse drug reactions ANKK1/DRD2 rs1800497 G/G PharmGKB 3 TreatG:x ReviewG:x Implication: ANKK1 alleles indicate an increased risk of tardive dyskinesia CYP2D6 alleles do not indicate changes from recommended dose Impiramine Phenotype Genetic Test Results Source/Evidence Torfanil TreatG:x ReviewG:x Ultrarapid metabolizer CYP2D6 (*1/*1)3N CPIC B ¹⁶ ; FDA PGx Table ³⁵ Implication: CYP2D6 ultrarapid metabolizer CYP2C19 *1/*17 CPIC B ¹⁶ ; FDA PGx Table ³⁵ ReviewG:x Rapid metabolizer CYP2D6 ultrarapid metabolizer: increased metabolism of Imipramine to less active compounds Lower plasma concentrations of active drug may reduce response CYP2C19 rapid metabolizer: increased metabolism of Imipramine may affect response or adverse drug reactions	Fanapt	Ultrarapid metab	olizer	CYP2D6	(*1/*1)3N	FDA PGx Table ³⁵			
Implication: ANKK1 alleles indicate an increased risk of tardive dyskinesia CYP2D6 alleles do not indicate changes from recommended dose Imipramine Phenotype Genetic Test Results Source/Evidence TreatG:x ReviewG: Ultrarapid metabolizer CYP2D6 (*1/*1)3N CPIC B ¹⁶ ;FDA PGx Table ³⁵ ReviewG: Rapid metabolizer CYP2D6 (*1/*1)7 CPIC B ¹⁶ ;FDA PGx Table ³⁵ Implication: CYP2D6 ultrarapid metabolizer: increased metabolism of Imipramine to less active compounds Lower plasma concentrations of active drug may reduce response CYP2C19 rapid metabolizer: increased metabolism of Imipramine may affect response or adverse drug reactions ▲ Avoid Imipramine use (per CPIC optional recommendation). Refer to TreatGx for alternatives and specific dosing recommendations. Lansoprazole Phenotype Genetic Test Results Source/Evidence Prevacid Rapid metabolizer CYP2C19 *1/*17 CPIC A ²² ; FDA PGx Table ³⁵ TreatG:x ReviewG:x Moderate CPIC recommendation: Initiate standard dose for the treatment of Helicobacter pylori infection and erosive esophagitis. cofexidine Phenotype Genetic Test Results Source/Evidence uccemyra Ultrarapid metabolizer CYP2D6 (*1/*1)3N FDA PGx Table ³⁵	P TrootG*	Increased risk of reactions	adverse drug	ANKK1/DRD2 rs1800497	G/G	PharmGKB 3			
CYP2D6 alleles do not indicate changes from recommended dose Imipramine Phenotype Genetic Test Results Source/Evidence Torfanil Ultrarapid metabolizer CYP2D6 (*1/*1)3N CPIC B ¹⁶ ;FDA PGx Table ³⁵ ReviewGx Rapid metabolizer CYP2C19 *1/*17 CPIC B ¹⁶ Implication: CYP2D6 ultrarapid metabolizer: increased metabolism of Imipramine to less active compounds Lower plasma concentrations of active drug may reduce response CYP2C19 rapid metabolizer: increased metabolism of Imipramine may affect response or adverse drug reactions Implication: CYP2C19 rapid metabolizer: increased metabolism of Imipramine may affect response or adverse drug reactions. Implication: Avoid Imipramine use (per CPIC optional recommendation). Refer to TreatGx for alternatives and specific dosing recommendations. Lansoprazole Phenotype Genetic Test Results Source/Evidence Prevacid Rapid metabolizer CYP2C19 *1/*17 CPIC A ²² ;FDA PGx Table ³⁵ TreatG:x ReviewG:x Moderate CPIC recommendation: Initiate standard dose for the treatment of Helicobacter pylori infection and erosive esophagitis. Lofexidine Phenotype Genetic Test Results Source/Evidence Implication: CYP2D6 alleles do not indicate change	ReviewG*	Implication:	ANKK1 alleles	indicate an increased	risk of tardive dyskin	esia			
Imipramine Phenotype Genetic Test Results Source/Evidence Torfariil TreatGx Ultrarapid metabolizer CYP2D6 (*1/*1)3N CPIC B ¹⁶ ;FDA PGx Table ³⁵ ReviewGx Rapid metabolizer CYP2C19 *1/*17 CPIC B ¹⁶ Implication: CYP2D6 ultrarapid metabolizer: increased metabolism of Imipramine to less active compounds Lower plasma concentrations of active drug may reduce response CYP2C19 rapid metabolizer: increased metabolism of Imipramine may affect response or adverse drug reactions. Implication: CYP2C19 rapid metabolizer: increased metabolism of Imipramine may affect response or adverse drug reactions. Implication: Avoid Imipramine use (per CPIC optional recommendation). Refer to TreatGx for alternatives and specific dosing recommendations. Ensoprazole Phenotype Genetic Test Results Source/Evidence Prevacid Rapid metabolizer CYP2C19 *1/*17 CPIC A ²² ; FDA PGx Table ³⁵ Implication: Moderate CPIC recommendation: Initiate standard starting daily dose. Consider increasing dose by 50-100% of the standard dose for the treatment of Helicobacter pylori infection and erosive esophagitis. Infectione Phenotype Genetic Test Results Source/Evidence Implication: CYP2D6 alleles do not indicate changes from recommended dose	Neview Gr		CYP2D6 alleles	s do not indicate chan	ges from recommen	ded dose			
Implication: Prient/ype Genetic test Results Source/Evidence Tofranil Ultrarapid metabolizer CYP2D6 (*1/*1)3N CPIC B ¹⁶ ;FDA PGx Table ³⁵ ReviewG: Rapid metabolizer CYP2D6 (*1/*1)3N CPIC B ¹⁶ ;FDA PGx Table ³⁵ Implication: CYP2D6 ultrarapid metabolizer: increased metabolism of Imipramine to less active compounds Lower plasma concentrations of active drug may reduce response CYP2C19 rapid metabolizer: increased metabolism of Imipramine may affect response or adverse drug reactions Implication: CYP2C19 rapid metabolizer: increased metabolism of Imipramine may affect response or adverse drug reactions Implication: Avoid Imipramine use (per CPIC optional recommendation). Refer to TreatGx for alternatives and specific dosing recommendations. Lansoprazole Phenotype Genetic Test Results Source/Evidence Prevacid Rapid metabolizer CYP2C19 *1/*17 CPIC A ²² ; FDA PGx Table ³⁵ TreatGx: ReviewG:x Implication: Moderate CPIC recommendation: Initiate standard starting daily dose. Consider increasing dose by 50-100% of the standard dose for the treatment of Helicobacter pylori infection and erosive esophagitis. Lofexidine Phenotype Genetic Test Results Source/Evidence Ultrarapid metabol	Imintomino	Dhanatuna		Constis Test	Doculto	Course /Evidence			
Iorranii Ottrarapid metabolizer CYP2D6 (*1/*1)3N CPIC B*0;FDA PGx Table ³⁵ ReviewG: Rapid metabolizer CYP2C19 *1/*17 CPIC B ¹⁶ Implication: CYP2D6 ultrarapid metabolizer: increased metabolism of Imipramine to less active compounds Lower plasma concentrations of active drug may reduce response CYP2C19 rapid metabolizer: increased metabolism of Imipramine may affect response or adverse drug reactions ▲ Avoid Imipramine use (per CPIC optional recommendation). Refer to TreatGx for alternatives and specific dosing recommendations. Lansoprazole Phenotype Genetic Test Results Source/Evidence Prevacid Rapid metabolizer CYP2C19 *1/*17 CPIC A ²² ;FDA PGx Table ³⁵ TreatGx ReviewGx Moderate CPIC recommendation: Initiate standard starting daily dose. Consider increasing dose by 50-100% of the standard dose for the treatment of Helicobacter pylori infection and erosive esophagitis. Lofexidine Phenotype Genetic Test Results Source/Evidence Lucemyra Ultrarapid metabolizer CYP2D6 (*1/*1)3N FDA PGx Table ³⁵ Implication: CYP2D6 alleles do not indicate changes from recommended dose Source/Evidence		Phenotype	- I'		Kesults				
ReviewG: Rapid metabolizer CYP2C19 *1/*17 CPIC B ¹⁶ Implication: CYP2D6 ultrarapid metabolizer: increased metabolism of Imipramine to less active compounds Lower plasma concentrations of active drug may reduce response CYP2C19 rapid metabolizer: increased metabolism of Imipramine may affect response or adverse drug reactions Implication: CYP2C19 rapid metabolizer: increased metabolism of Imipramine may affect response or adverse drug reactions Implication: Avoid Imipramine use (per CPIC optional recommendation). Refer to TreatGx for alternatives and specific dosing recommendations. Lansoprazole Phenotype Genetic Test Results Source/Evidence Prevacid Rapid metabolizer CYP2C19 *1/*17 CPIC A ²² ; FDA PGX Table ³⁵ TreatG: Moderate CPIC recommendation: Initiate standard starting daily dose. Consider increasing dose by 50-100% of the standard dose for the treatment of Helicobacter pylori infection and erosive esophagitis. Lofexidine Phenotype Genetic Test Results Source/Evidence Lucemyra Ultrarapid metabolizer CYP2D6 (*1/*1)3N FDA PGX Table ³⁵ Implication: CYP2D6 alleles do not indicate changes from recommended dose F	TreatG ¹	Ultrarapid metab	olizer	CTP2D6	(*1/*1)3N	CPIC B ¹⁰ ;FDA PGx Tablo ³⁵			
Implication: CYP2D6 ultrarapid metabolizer: increased metabolism of Imipramine to less active compounds Lower plasma concentrations of active drug may reduce response CYP2C19 rapid metabolizer: increased metabolism of Imipramine may affect response or adverse drug reactions Avoid Imipramine use (per CPIC optional recommendation). Refer to TreatGx for alternatives and specific dosing recommendation. Phenotype Genetic Test Results Source/Evidence Prevacid Rapid metabolizer CYP2C19 *1/*17 CPIC A ²² ; FDA PGx Table ³⁵ TreatG:x Moderate CPIC recommendation: Initiate standard dose for the treatment of Helicobacter pylori infection and erosive esophagitis. Source/Evidence cofexidine Phenotype Genetic Test Results Source/Evidence uccemyra Ultrarapid metabolizer CYP2C19 *1/*17 CPIC A ²² ; FDA PGx Table ³⁵ Moderate CPIC recommendation: Initiate standard dose for the treatment of Helicobacter pylori infection and erosive esophagitis. Source/Evidence Cofexidine Phenotype Genetic Test Results Source/Evidence uccemyra Ultrarapid metabolizer CYP2D6 (*1/*1)3N FDA PGx Table ³⁵ Moderate CPIC CYP2D6 (*1/*1)3N FDA PGx Table ³⁵	ReviewGx	Rapid metabolizer		CYP2C19	*1/*17	CPIC B ¹⁶			
CYP2C19 rapid metabolizer: increased metabolism of Imipramine may affect response or adverse drug reactions ▲ Avoid Imipramine use (per CPIC optional recommendation). Refer to TreatGx for alternatives and specific dosing recommendations. Cansoprazole Phenotype Genetic Test Results Source/Evidence Prevacid Rapid metabolizer CYP2C19 *1/*17 CPIC A ²² ;FDA PGx Table ³⁵ TreatGx: ReviewGx Moderate CPIC recommendation: Initiate standard dose for the treatment of Helicobacter pylori infection and erosive esophagitis. Source/Evidence cofexidine Phenotype Genetic Test Results Source/Evidence uccemyra Ultrarapid metabolizer CYP2D6 (*1/*1)3N FDA PGx Table ³⁵ Implication: CYP2D6 alleles do not indicate changes from recommended dose FDA PGx Table ³⁵		Implication:	CYP2D6 ultrar to less active Lower plasma	apid metabolizer: incr compounds concentrations of act	oid metabolizer: increased metabolism of Imipramine ompounds oncentrations of active drug may reduce response				
▲ Avoid Imipramine use (per CPIC optional recommendation). Refer to TreatGx for alternatives and specific dosing recommendations. Lansoprazole Phenotype Genetic Test Results Source/Evidence Prevacid Rapid metabolizer CYP2C19 *1/*17 CPIC A ²² ; FDA PGx Table ³⁵ Implication: Moderate CPIC recommendation: Initiate standard starting daily dose. Consider increasing dose by 50-100% of the standard dose for the treatment of Helicobacter pylori infection and erosive esophagitis. Lofexidine Phenotype Genetic Test Results Source/Evidence Lucemyra Ultrarapid metabolizer CYP2D6 (*1/*1)3N FDA PGx Table ³⁵ Implication: CYP2D6 alleles do not indicate changes from recommended dose FDA PGx Table ³⁵			CYP2C19 rapid metabolizer: increased metabolism of Imipramine may affect response or adverse drug reactions						
Lansoprazole Phenotype Genetic Test Results Source/Evidence Prevacid Rapid metabolizer CYP2C19 *1/*17 CPIC A ²² ;FDA PGx Table ³⁵ Implication: Moderate CPIC recommendation: Initiate standard starting daily dose. Consider increasing dose by 50-100% of the standard dose for the treatment of Helicobacter pylori infection and erosive esophagitis. Lofexidine Phenotype Genetic Test Results Source/Evidence Lucemyra Ultrarapid metabolizer CYP2D6 (*1/*1)3N FDA PGx Table ³⁵ Implication: CYP2D6 alleles do not indicate changes from recommended dose FOA PGx Table ³⁵		3	Avoid Imipram TreatGx for al	nine use (per CPIC op ternatives and specific	cional recommendation dosing recommenda	on). Refer to ations.			
Prevacid Rapid metabolizer CYP2C19 *1/*17 CPIC A ²² ;FDA PGx Table ³⁵ TreatG: Implication: Moderate CPIC recommendation: Initiate standard starting daily dose. Consider increasing dose by 50-100% of the standard dose for the treatment of Helicobacter pylori infection and erosive esophagitis. Lofexidine Phenotype Genetic Test Results Source/Evidence Lucemyra Ultrarapid metabolizer CYP2D6 (*1/*1)3N FDA PGx Table ³⁵ Implication: CYP2D6 alleles do not indicate changes from recommended dose	Lansoprazole	Phenotype		Genetic Test	Results	Source/Evidence			
TreatG: Implication: Moderate CPIC recommendation: Initiate standard starting daily dose. Consider increasing dose by 50-100% of the standard dose for the treatment of Helicobacter pylori infection and erosive esophagitis. Lofexidine Phenotype Genetic Test Results Source/Evidence Lucemyra Ultrarapid metabolizer CYP2D6 (*1/*1)3N FDA PGx Table ³⁵ Implication: CYP2D6 alleles do not indicate changes from recommended dose	Prevacid	Rapid metabolize	er	CYP2C19	*1/*17	CPIC A ²² ;FDA PGx Table ³⁵			
Lofexidine Phenotype Genetic Test Results Source/Evidence Lucemyra Ultrarapid metabolizer CYP2D6 (*1/*1)3N FDA PGx Table ³⁵ Implication: CYP2D6 alleles do not indicate changes from recommended dose	TreatG≍ ReviewG≍	Implication:	Moderate CPIC recommendation: Initiate standard starting daily dose. Consider increasing dose by 50-100% of the standard dose for the treatment of Helicobacter pylori infection and erosive esophagitis.						
Lucemyra Ultrarapid metabolizer CYP2D6 (*1/*1)3N FDA PGx Table ³⁵ Implication: CYP2D6 alleles do not indicate changes from recommended dose	ofexidine	Phenotype		Genetic Test	Results	Source/Evidence			
Implication: CYP2D6 alleles do not indicate changes from recommended dose	Lucemyra	Ultrarapid metab	olizer	CYP2D6	(*1/*1)3N	FDA PGx Table ³⁵			
	କ୍ୱାର	Implication:	CYP2D6 alleles	s do not indicate chan	ges from recommen	ded dose			
	•								





SPECIMEN DETAILS BARCODE: 50000 SAMPLE ID: 50000 TYPE: SWAB COLLECTED: 31/Jan/2024 ORDERED BY

Lorazepam	Phenotype		Genetic Test	Results	Source/Evidence		
Ativan	Intermediate met	abolizer	CYP2C9	*1/*2	Case-control studies ¹³		
ReviewG _%	Implication:	CYP2C9 alleles	indicate increased risl	k of Lorazepam-re	lated falls		
Lovastatin	Phenotype		Genetic Test	Results	Source/Evidence		
Altoprev	Normal function		SLCO1B1	*1/*1	CPIC A ⁵		
ရေခ	Implication:	SLCO1B1 allele	es indicate typical expo	osure to Lovastatir	1		
₽ TreatG≭ ReviewG≭		Consider preso disease-specifi	cribing desired starting c guidelines	dose and adjust b	ased on		
Loxapine	Phenotype		Genetic Test	Results	Source/Evidence		
Adasuve Loxapac	Increased risk of a reactions	adverse drug	ANKK1/DRD2 rs1800497	G/G	PharmGKB 3		
TreatG≍ ReviewG≍	Implication:	ANKK1 alleles	indicate an increased r	isk of tardive dysk	inesia		
Lurasidone	Phenotype		Genetic Test	Results	Source/Evidence		
Latuda G _{lí} ð	Increased risk of a reactions	adverse drug	ANKK1/DRD2 rs1800497	G/G	PharmGKB 3		
.	Implication:	ANKK1 alleles	indicate an increased r	isk of tardive dysk	inesia		
TreatGx ReviewGx							
Meclizine	Phenotype		Genetic Test	Results	Source/Evidence		
Antivert	Ultrarapid metabo	lizer	CYP2D6	(*1/*1)3N	FDA PGx Table ³⁵		
ReviewGჯ	Implication:	cation: CYP2D6 ultrarapid metabolizer: increased metabolism of Meclizine to less active compounds					
	Lower plasma concentrations of active drug may reduce response						
	2	This drug has a monograph or	an FDA therapeutic rec FDA labelling for dosir	commendation, ref ng recommendatio	er to drug ns		
Meloxicam	Phenotype	This drug has a monograph or	an FDA therapeutic rec FDA labelling for dosir Genetic Test	commendation, ref ng recommendatio Results	er to drug ns Source/Evidence		
Meloxicam Anjeso	Phenotype Intermediate met	This drug has a monograph or abolizer (AS 1.5	an FDA therapeutic rec FDA labelling for dosir Genetic Test CYP2C9 (Star Allele	commendation, ref ng recommendatio Results es) *1/*2	er to drug ns Source/Evidence CPIC A ³²		
Meloxicam Anjeso Mobic Qmiiz ODT Vivlodex IreatG:*	Phenotype Intermediate met Implication:	This drug has a monograph or abolizer (AS 1.5 CYP2C9 alleles	an FDA therapeutic rec FDA labelling for dosir Genetic Test 5) CYP2C9 (Star Allele 6 do not indicate chang	commendation, ref ng recommendatio Results es) *1/*2 ges from recomme	er to drug ns Source/Evidence CPIC A ³² ended dose		
Meloxicam Anjeso Mobic Qmiiz ODT Vivlodex ¶ TreatG% ReviewG%	Phenotype Intermediate met Implication:	This drug has a monograph or abolizer (AS 1.5 CYP2C9 alleles	an FDA therapeutic rec FDA labelling for dosir Genetic Test 5) CYP2C9 (Star Allele 5 do not indicate chan <u>c</u>	commendation, ref ng recommendatio Results es) *1/*2 ges from recomme	er to drug ns Source/Evidence CPIC A ³² ended dose		
Meloxicam Anjeso Mobic Qmiiz ODT Vivlodex ●J● TreatG% ReviewG% Methotrimeprazine	Phenotype Intermediate met Implication: Phenotype	This drug has a monograph or abolizer (AS 1.5 CYP2C9 alleles	an FDA therapeutic rec FDA labelling for dosir Genetic Test 5) CYP2C9 (Star Allele 6 do not indicate chang Genetic Test	commendation, ref ng recommendatio Results es) *1/*2 ges from recomme Results	er to drug ns Source/Evidence CPIC A ³² ended dose Source/Evidence		
Meloxicam Anjeso Mobic Qmiiz ODT Vivlodex ¶ TreatG ReviewG ReviewG Methotrimeprazine Nozinan	Phenotype Intermediate met Implication: Phenotype Increased risk of a reactions	This drug has a monograph or abolizer (AS 1.5 CYP2C9 alleles	an FDA therapeutic rec FDA labelling for dosir Genetic Test 5) CYP2C9 (Star Allele 6 do not indicate chang Genetic Test ANKK1/DRD2 rs1800497	commendation, ref ng recommendatio Results es) *1/*2 ges from recomme Results G/G	er to drug ns Source/Evidence CPIC A ³² ended dose Source/Evidence PharmGKB 3		



SPECIMEN DETAILS

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Metoclopramide	Phenotype		Genetic Test	Results	Source/Evidence		
Metonia	Ultrarapid meta	bolizer	CYP2D6	(*1/*1)3N	FDA PGx Table ³⁵		
Reglan	Implication:	CYP2D6 allele	do not indicate changes from recommended dose				
واع				-			
, •							
TreatG×							
ReviewG %							
Metoprolol	Phenotype		Genetic Test	Results	Source/Evidence		
Kapspargo Sprinkle	Ultrarapid meta	bolizer	CYP2D6	(*1/*1)3N	DPWG (PharmGKB		
Lopressor	·				1A) ⁸ ;FDA PGx Table ³⁵		
Toprol-XL	Implication:	CYP2D6 ultra	rapid metabolizer: inc	reased metabolism of	f Metoprolol to		
T IC		less active co	mpounas				
IreatG%		Lower plasma	a concentrations of ac	tive drug may reduce	response		
KeviewGX		2 Consider sele	cting an alternative be	eta-blocker			
	Dhanna tauna		Constitution Track	Desults			
Mirabegron	Phenotype		Genetic lest	Results	Source/Evidence		
Myrbetriq	Ultrarapid meta	bolizer	CYP2D6	(*1/*1)3N	FDA PGx Table ³⁵		
	Implication:	CYP2D6 allele	es do not indicate char	nges from recommen	ded dose		
P							
TreatGx							
ReviewGx							
Molindone	Phenotype		Genetic Test	Results	Source/Evidence		
Moban	Increased risk o	f adverse drug	ANKK1/DRD2	G/G	PharmGKB 3		
TreatG🔀	reactions	5	rs1800497				
ReviewG %	Implication:	ANKK1 alleles	indicate an increased	risk of tardive dyskin	esia		
Morphine	Phenotype		Genetic lest	Results	Source/Evidence		
Kadian M-Eslon	Reduced respor	ise	OPRM1 rs1/999/	'1 G/G	PharmGKB 3°		
Morphabond ER	Implication:	OPRM1 alleles	s indicate a reduced re	esponse to Morphine			
MS Contin		The impact of	of OPRM1 variants on response may not translate to				
Statex		clinically actio	nable dose alterations	5			
€∖€							
Troot							
ReviewG ²							
Neview Gr							
Nebivolol	Phenotype		Genetic Test	Results	Source/Evidence		
Bystolic	Ultrarapid meta	bolizer	CYP2D6	(*1/*1)3N	FDA PGx Table ³⁵		
GIL	Implication:	CYP2D6 allele	es do not indicate char	nges from recommen	ded dose		
P *							
TreatG🛪							
ReviewG🛪							
Nitrazenam	Phenotype		Genetic Test	Reculto	Source/Evidence		
Mogadon	Intermediate m	etabolizer		*1/*7			
	Implication		CIF2C7				
₽		CTP2C9 allele	is indicate increased ri	sk of Nicrazepam-rela			
					D 10 (07		
.: 4U Health					Page: 19 of 37		
-			Genetic Test Results For	DEMO PATIENT			

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NAME: DEMO PATIENT DOB: 31/Jan/2024 SEX AT BIRTH: Male SPECIMEN DETAILS BARCODE: 50000 SAMPLE ID: 50000 TYPE: SWAB COLLECTED: 31/Jan/2024 ORDERED BY

Nortriptyline	Phenotype		Genetic Test	Results	Source/Evidence		
Aventyl Pamelor	Ultrarapid metabo	lizer	CYP2D6	(*1/*1)3N	CPIC A ¹⁶ ;FDA PGx Table ³⁵		
TreatG % ReviewG%	Implication:	CYP2D6 ultrar to less active Lower plasma	apid metabolizer: increas compounds concentrations of active	ed metabolism of drug may reduce	f Nortriptyline response		
	Avoid Nortripty alternative dru consider titrati metabolizers) for alternative		yline use due to potential ug not metabolized by CY ing to a higher target dos – per CPIC strong recon is and specific dosing reco	 /line use due to potential lack of efficacy. Consider g not metabolized by CYP2D6. If use is warranted, ng to a higher target dose (compared to normal per CPIC strong recommendation. Refer to TreatGx s and specific dosing recommendations. 			
Olanzapine	Phenotype		Genetic Test	Results	Source/Evidence		
Zyprexa TreatGx	Increased risk of a reactions	adverse drug	ANKK1/DRD2 rs1800497	G/G	PharmGKB 3		
ReviewG🛪	Implication:	ANKK1 alleles	indicate an increased risk	of tardive dyskin	esia		
Omeprazole	Phenotype		Genetic Test	Results	Source/Evidence		
Losec Olex	Rapid metabolizer	-	CYP2C19	*1/*17	CPIC A ²² ;FDA PGx Table ³⁵		
Prilosec TreatG: ReviewG:	Implication:	Moderate CPI Consider incre treatment of I	C recommendation: Initia asing dose by 50-100% Helicobacter pylori infectio	ite standard start of the standard d on and erosive es	ing daily dose. ose for the ophagitis.		
Ondansetron	Phenotype		Genetic Test	Results	Source/Evidence		
Zofran	Ultrarapid metabolizer		CYP2D6	(*1/*1)3N	CPIC A ²		
Zuplenz	Implication:	CYP2D6 ultrar to less active	apid metabolizer: increas compounds	ed metabolism of	fOndansetron		
ReviewG %		Lower plasma	concentrations of active	drug may reduce	response		
	3	Select an alternative drug not predominantly metabolized by CYP2D6					
Oral contraceptives	Phenotype		Genetic Test	Results	Source/Evidence		
ReviewG _%	Typical risk of adv reactions	erse drug	Factor V rs6025	C/C	PharmGKB 1A		
	Typical risk of adv reactions	erse drug	Factor II rs1799963	G/G	PharmGKB 3		
	Implication:	F2 and F5 alle	les do not indicate chang	es from recomme	ended dose		
Oxazepam	Phenotype		Genetic Test	Results	Source/Evidence		
ReviewG _%	Intermediate met	abolizer	CYP2C9	*1/*2	Case-control studies ¹³		
	Implication: CYP2C9 alleles		s indicate increased risk o	f Oxazepam-rela	ted falls		
Paliperidone	Phenotype		Genetic Test	Results	Source/Evidence		
Invega	Increased risk of a reactions	adverse drug	ANKK1/DRD2 rs1800497	G/G	PharmGKB 3		
TreatG≍ ReviewG≍	Implication:	ANKK1 alleles	indicate an increased risk	of tardive dyskin	esia		



SPECIMEN DETAILS

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Pantoprazole	Phenotype		Genetic Test	Results	Source/Evidence			
Pantoloc Protonix	Rapid metabolize	r	CYP2C19	*1/*17	CPIC A ²² ;FDA PGx Table ³⁵			
Tecta TreatGx ReviewGx	Implication:	Moderate CPI Consider incre treatment of I	C recommendation: I asing dose by 50-100 Helicobacter pylori infe	nitiate standard start 0% of the standard d action and erosive es	ing daily dose. ose for the ophagitis.			
Paroxetine	Phenotype		Genetic Test	Results	Source/Evidence			
Brisdelle Paxil Pexeva	Ultrarapid metab	olizer	CYP2D6	(*1/*1)3N	CPIC A ¹⁵ ;FDA PGx Table ³⁵			
G _{II} Ð	Implication:	CYP2D6 ultrar less active cor	apid metabolizer: incr npounds	eased metabolism o	f Paroxetine to			
P *		Lower plasma	concentrations of act	tive drug may reduce	response			
TreatGx ReviewGx	3	Avoid Paroxet	ine use					
Perphenazine	Phenotype		Genetic Test	Results	Source/Evidence			
••	Ultrarapid metab	olizer	CYP2D6	(*1/*1)3N	FDA PGx Table ³⁵			
TreatG:	Increased risk of reactions	adverse drug	ANKK1/DRD2 rs1800497	G/G	PharmGKB 3			
neview G.	Implication:	ANKK1 alleles	indicate an increased	risk of tardive dyskin	esia			
		CYP2D6 alleles do not indicate changes from recommended dose						
Phenytoin	Phenotype		Genetic Test	Results	Source/Evidence			
Dilantin	Intermediate metabolizer		CYP2C9	*1/*2	CPIC A ¹⁸			
Phenytek	Implication:	CYP2C9 Intermediate metabolizer with an activity score of 1.5: slightly reduced metabolism of Phenytoin to less active compounds; however, this does not appear to translate into increased side effects						
₽ ReviewG _×		CYP2C9 alleles	s do not indicate chan	ges from recommen	ded dose			
Pimozide	Phenotype		Genetic Test	Results	Source/Evidence			
Orap	Ultrarapid metab	olizer	CYP2D6	(*1/*1)3N	FDA PGx Table ³⁵			
TreatG% ReviewG%	Increased risk of reactions	adverse drug	ANKK1/DRD2 rs1800497	G/G	PharmGKB 3			
	Implication:	ANKK1 alleles	indicate an increased risk of tardive dyskinesia					
		CYP2D6 alleles	s do not indicate changes from recommended dose					
Piroxicam	Phenotype		Genetic Test	Results	Source/Evidence			
Feldene	Intermediate me	tabolizer (AS 1.5	5) CYP2C9 (Star Alle	les) *1/*2	CPIC A ³² ;FDA PGx			
TreatGx ReviewGx	Implication:	CYP2C9 alleles	s do not indicate chan	ges from recommen	Table ³⁵ ded dose			
Pitavastatin	Phenotype		Genetic Test	Results	Source/Evidence			
Livalo	Normal function		SLCO1B1	*1/*1	CPIC A ⁵			
Zypitamag	Implication:	SLCO1B1 allel	es indicate typical exp	osure to Pitavastatir				
•		Consider pres disease-specif	cribing desired starting ic guidelines	g dose and adjust ba	sed on			
TreatG☆ ReviewG☆								



SPECIMEN DETAILS BARCODE: 50000 SAMPLE ID: 50000 TYPE: SWAB COLLECTED: 31/Jan/2024 ORDERED BY

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Pravastatin	Phenotype		Genetic Test	Results	Source/Evidence		
Pravachol	Normal function		SLCO1B1	*1/*1	CPIC A ⁵		
େ _∬ ର	Implication:	SLCO1B1 alle	es indicate typical exp	osure to Pravastatin			
₽ TreatG≍		Consider pres disease-specil	cribing desired starting ic guidelines	g dose and adjust bas	sed on		
ReviewG %							
Prochlorperazine	Phenotype		Genetic Test	Results	Source/Evidence		
Compro TreatGx	Increased risk of reactions	adverse drug	ANKK1/DRD2 rs1800497	G/G	PharmGKB 3		
ReviewG %	Implication:	ANKK1 alleles	indicate an increased	risk of tardive dyskin	esia		
Promethazine	Phenotype		Genetic Test	Results	Source/Evidence		
Phenadoz Promethegan	Increased risk of reactions	adverse drug	ANKK1/DRD2 rs1800497	G/G	PharmGKB 3		
TreatGx ReviewGx	Implication:	ANKK1 alleles	indicate an increased	risk of tardive dyskin	esia		
Propafenone	Phenotype		Genetic Test	Results	Source/Evidence		
Rythmol TreatGx	Ultrarapid metabo	olizer	CYP2D6	(*1/*1)3N	DPWG (PharmGKB 1A) ⁸ ;FDA PGx Table ³⁵		
ReviewGx	Implication:	CYP2D6 ultrar to less active	5 ultrarapid metabolizer: increased metabolism of Propafenone active compounds				
		Lower plasma	concentrations of ac	tive drug may reduce	response		
	2	Adjust dose ir electrocardiog	response to plasma gram or select an alter	concentration and re- native drug	cord		
Propranolol	Phenotype		Genetic Test	Results	Source/Evidence		
Inderal Innopran TreatGx ReviewGx	Ultrarapid metabo Implication:	olizer CYP2D6 allele	CYP2D6 (*1/*1)3N FDA PGx Table ³⁵ s do not indicate changes from recommended dose				
Protriptyline	Phenotype		Genetic Test	Results	Source/Evidence		
Vivactil	Ultrarapid metabo	lizer	CYP2D6	(*1/*1)3N	FDA PGx Table ³⁵		
ReviewG %	Implication:	CYP2D6 allele	s do not indicate chan	ges from recommen	ded dose		
Quetiapine	Phenotype		Genetic Test	Results	Source/Evidence		
Seroquel	Increased risk of reactions	adverse drug	ANKK1/DRD2 rs1800497	G/G	PharmGKB 3		
TreatGx ReviewGx	Implication:	ANKK1 alleles	indicate an increased	risk of tardive dyskin	esia		
Risperidone	Phenotype		Genetic Test	Results	Source/Evidence		
Perseris Risperdal	Ultrarapid metabo	lizer	CYP2D6	(*1/*1)3N	DPWG (PharmGKB 1A) ⁸		
C C	Implication:	CYP2D6 ultrar	apid metabolizer: The	percentage of patie	nts with		
P Troat C:		therapy failure to a high ratio	e increases from 16% of the active metabo ood-brain barrier mor	to 37%. The gene v lite compared to risp e effectively	ariation leads eridone, which		
ReviewG ²		Consider titra	ting the dose or using	an alternative drug n	ot		
	predominantly metabolized by CYP2D6						

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Rosuvastatin	Phenotype	Genetic Test	Results	Source/Evidence				
Crestor Ezallor	Normal function	SLCO1B1	*1/*1	CPIC A ⁵ ;FDA PGx Table ³⁵				
C _{II} 9	Implication:	SLCO1B1 alleles indicate typical exp	SLCO1B1 alleles indicate typical exposure to Rosuvastatin					
P *								
TreatGx ReviewGx								
Sertraline	Phenotype	Genetic Test	Results	Source/Evidence				
Zoloft	Rapid metabolizer	CYP2C19	*1/*17	CPIC B ¹⁵				
P P	Implication:	YP2C19 alleles do not indicate changes from recommended dose						
TreatG☆ ReviewG☆	2	If Sertraline is ineffective, consider a predominantly metabolized by CYP2	n alternative drug no 2C19	ot				
Simvastatin	Phenotype	Genetic Test	Results	Source/Evidence				
Zocor Flolipid	Normal function	SLCO1B1	*1/*1	CPIC A ⁵ ;FDA PGx Table ³⁵				
e ^j a	Implication:	SLCO1B1 alleles indicate typical exp	osure to Simvastati	n				
PP		Consider prescribing desired starting	dose and adjust ba	ased on				
TreatG☆ ReviewG☆		disease-specific guidelines						
Siponimod	Phenotype	Genetic Test	Results	Source/Evidence				
Mayzent	Intermediate met	abolizer CYP2C9 (Star Allel	es) *1/*2	FDA PGx Table ³⁵				
6 ₁ 9	Implication:	CYP2C9 alleles do not indicate chan	ges from recommer	nded dose				
ReviewG≍								
Tacrolimus	Phenotype	Genetic Test	Results	Source/Evidence				
Advagraf Astagraf XI	Poor metabolizer	CYP3A5	*3/*3	CPIC A ³ ;FDA PGx				
Envarsus XR Prograf Protopic	Normal metaboliz	er CYP3A4	*1A/*1A	PharmGKB 1B (Pharmacokinetics)/2A (Dosage)				
ReviewG≍	Implication:	CYP3A5 alleles do not indicate chang	ges from recommer	nded dose				
		CYP3A4 alleles do not indicate change	ges from recommer	nded dose				
		Use therapeutic drug monitoring to	drug monitoring to guide dose adjustments					
Tamoxifen	Phenotype	Genetic Test	Results	Source/Evidence				
Nolvadex Soltamox	Ultrarapid metabo	lizer CYP2D6 (Activity Score)	(*1/*1)3N	CPIC A ¹¹ ;FDA PGx Table ³⁵				
ReviewGx	Implication:	CYP2D6 ultrarapid metabolizer: incr endoxifen	eased metabolism o	of Tamoxifen to				
		Strong CPIC recommendation for breast cancer therapy: Initiate therapy with recommended standard of care dosing. Avoid moderate and strong CYP2D6 inhibitors.						
	2	Recommendation for conditions oth exaggerated response with pronour 2021)	er than breast cance nced adverse effects	er: Risk of ; (He et al.,				



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Tamsulosin	Phenotype		Genetic Test	Results	Source/Evidence	
Flomax	Ultrarapid metal	olizer	CYP2D6	(*1/*1)3N	FDA PGx Table ³⁵	
ReviewG ≍	Implication:	CYP2D6 alleles do not indicate changes from recommended dose				
Temazepam	Phenotype		Genetic Test	Results	Source/Evidence	
Restoril	Intermediate me	etabolizer	CYP2C9	*1/*2	Case-control studies ¹³	
TreatG% ReviewG%	Implication:	CYP2C9 alleles	s indicate increased ri	sk of Temazepam-rel	lated falls	
Tenoxicam	Phenotype		Genetic Test	Results	Source/Evidence	
Mobiflex	Intermediate me	etabolizer (AS 1.	5) CYP2C9 (Star Alle	les) *1/*2	CPIC A ³²	
6 _{IL} 9	Implication:	CYP2C9 alleles	s do not indicate char	iges from recommen	ded dose	
•						
ReviewGx						
Tetrabenazine	Phenotype		Genetic Test	Results	Source/Evidence	
Austedo	Ultrarapid metal	polizer	CYP2D6	(*1/*1)3N	FDA PGx Table ³⁵	
Nitoman Xenazine	Implication:	CYP2D6 alleles	s do not indicate char	iges from recommen	ded dose	
► ReviewG _×						
Thioridazine	Phenotype		Genetic Test	Results	Source/Evidence	
TreatG🛪	Ultrarapid metal	oolizer	CYP2D6	(*1/*1)3N	FDA PGx Table ³⁵	
ReviewGx	Increased risk o reactions	f adverse drug	ANKK1/DRD2 rs1800497	G/G	PharmGKB 3	
	Implication:	Implication: ANKK1 alleles indicate an increased risk of tardive dyskinesia				
		CYP2D6 alleles	s do not indicate char	iges from recommen	ded dose	
Tolterodine	Phenotype		Genetic Test	Results	Source/Evidence	
Detrol	Ultrarapid metal	olizer	CYP2D6	(*1/*1)3N	FDA PGx Table ³⁵	
କୁ _{ଳି} କ	Implication:	CYP2D6 alleles	s do not indicate char	iges from recommen	ded dose	
TreatGx						
ReviewGx						
Tramadol	Phenotype		Genetic Test	Results	Source/Evidence	
Conzip Durela	Ultrarapid metal	olizer	CYP2D6	(*1/*1)3N	CPIC A ⁶ ;FDA PGx	
Ralivia Ultram	Implication:	CYP2D6 ultrar active metabo	apid metabolizer: incl lite may increase the	reased metabolism o risk of toxicity	f Tramadol to	
∠ytram XL €µ€		Avoid Tramad	ol use due to potentia	al for serious toxicity.	If opioid use is	
? *		CPIC strong re	ecommendation). Ref	er to TreatGx for alte	ernatives and	
TreatGx ReviewGx		specific dosing	recommendations.			
Triazolam	Phenotype		Genetic Test	Results	Source/Evidence	
Halcion	Intermediate me	etabolizer	CYP2C9	*1/*2	Case-control studies ¹³	
TreatG≭ ReviewG≭	Implication:	CYP2C9 alleles	s indicate increased ri	sk of Triazolam-relate	ed falls	
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Trifluoperazine	Phenotype		Genetic Test	Results	Source/Evidence		
	Increased risk of reactions	adverse drug	ANKK1/DRD2 rs1800497	G/G	PharmGKB 3		
ReviewG _x	Implication:	nplication: ANKK1 alleles indicate an increased risk of tardive dyskinesia					
Trimipramine	Phenotype		Genetic Test	Results	Source/Evidence		
Surmontil ReviewG::	Ultrarapid metabo	olizer	CYP2D6	(*1/*1)3N	CPIC B ¹⁶ ;FDA PGx Table ³⁵		
	Rapid metabolize	r	CYP2C19	*1/*17	CPIC B ¹⁶		
	Implication:	Implication: CYP2D6 ultrar to less active of Lower plasma		apid metabolizer: increased metabolism of Trimipramine compounds concentrations of active drug may reduce response			
		CYP2C19 rap may affect re	id metabolizer: increa esponse or adverse dru	sed metabolism of Tri ug reactions	imipramine		
	3	Avoid Trimipro TreatGx for a	amine use (per CPIC o Iternatives and specifie	ptional recommendat dosing recommenda	tion). Refer to ations.		
Valbenazine	Phenotype		Genetic Test	Results	Source/Evidence		
Ingrezza	Ultrarapid metabo	olizer	CYP2D6	(*1/*1)3N	FDA PGx Table ³⁵		
	Implication:	CYP2D6 allele	es do not indicate char	ges from recommen	ded dose		
ReviewG %							
Venlafaxine	Phenotype		Genetic Test	Results	Source/Evidence		
Effexor XR	Ultrarapid metabo	olizer	CYP2D6	(*1/*1)3N	DPWG (PharmGKB 1A) ⁸ ;FDA PGx Table ³⁵		
	Implication: CYP2D6 ultrarapid metabolizer: increased metabolism of Venlafaxine to less active compounds						
TreatGx	Lower plasma concentrations of active drug may r				response		
ReviewG _%	Consider an increase in dose to 150% of the standard dose						
Voriconazole	Phenotype		Genetic Test	Results	Source/Evidence		
Vfend €)r●	Rapid metabolize	r	CYP2C19	*1/*17	CPIC A ²⁶ ;FDA PGx Table ³⁵		
	Implication:	CYP2C19 rap less active co	id metabolizer: increa mpounds	sed metabolism of Vo	iconazole to		
ReviewGx		Lower plasma	a concentrations of ac	tive drug may reduce	response		
	2	Consider an a CYP2C19	alternative drug not pro	edominantly metaboli	ized by		
Vortioxetine	Phenotype		Genetic Test	Results	Source/Evidence		
Trintellix	Ultrarapid metabo	olizer	CYP2D6	(*1/*1)3N	FDA PGx Table ³⁵		
TreatG☆ ReviewG☆	Implication:	CYP2D6 allele	es do not indicate char	ges from recommen	ded dose		
Warfarin	Phenotype		Genetic Test	Results	Source/Evidence		
Coumadin Jantoven	Intermediate met	abolizer	CYP2C9	*1/*2	CPIC A ¹⁷ ;FDA PGx Table ³⁵		
TreatG% ReviewG%	Increased respon	se	VKORC1	A/A	CPIC A ¹⁷ ;FDA PGx Table ³⁵		
	Implication: A The algorithm in TreatGx includes pharmacogenetics and other clinical factors in calculating initial warfarin dose						



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Ziprasidone	Phenotype		Genetic Test	Results	Source/Evidence	
Geodon Zeldox	Increased risk o reactions	f adverse drug	ANKK1/DRD2 rs1800497	G/G	PharmGKB 3	
TreatG☆ ReviewG☆	Implication:	ANKK1 alleles	indicate an increased	risk of tardive dyskin	esia	
Zuclopenthixol	Phenotype		Genetic Test	Results	Source/Evidence	
Clopixol TreatGx	Ultrarapid metabolizer		CYP2D6	(*1/*1)3N	DPWG (PharmGKB 1A) ⁸	
ReviewGx	Increased risk of adverse drug reactions		ANKK1/DRD2 rs1800497	G/G	PharmGKB 3	
	Implication:	CYP2D6 ultrarapid metabolizer: increased metabolism of Zuclopenthixol to less active compounds				
		Lower plasma	concentrations of act	ctive drug may reduce response		
		Avoid Zuclope	iclopenthixol use			
		ANKK1 alleles	s indicate an increased risk of tardive dyskinesia			



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Table of Available References

Drug	Genetic Test	Sources
Alfentanil	OPRM1 rs1799971	PharmGKB
Alprazolam	CYP2C9	Case-control studies ¹³
Amitriptyline	CYP2D6	CPIC ¹⁶ ;FDA ³⁵
Amitriptyline	CYP2C19	CPIC ¹⁶
Amoxapine	CYP2D6	FDA ³⁵
Amphetamine	CYP2D6	FDA ³⁵
Aripiprazole	CYP2D6	DPWG ⁸ ;FDA ³⁵
Aripiprazole	ANKK1/DRD2 rs1800497	PharmGKB
Aripiprazole lauroxil	CYP2D6	FDA ³⁵
Asenapine	ANKK1/DRD2 rs1800497	PharmGKB
Atomoxetine	CYP2D6 (Activity Score)	CPIC ⁴ ;FDA ³⁵
Atorvastatin	SLC01B1	CPIC ⁵ ;FDA ³⁵
Avatrombopag	CYP2C9	FDA ³⁵
Brexpiprazole	CYP2D6	DPWG ⁸ ;FDA ³⁵
Brexpiprazole	ANKK1/DRD2 rs1800497	PharmGKB
Brivaracetam	CYP2C19	FDA ³⁵
Bromazepam	CYP2C9	Case-control studies ¹³
Cariprazine	ANKK1/DRD2 rs1800497	PharmGKB
Carisoprodol	CYP2C19	FDA ³⁵
Carvedilol	CYP2D6	FDA ³⁵
Celecoxib	CYP2C9 (Star Alleles)	CPIC ³² ;FDA ³⁵
Cevimeline	CYP2D6	FDA ³⁵
Chlordiazepoxide	CYP2C9	Case-control studies ¹³
Chlorpromazine	ANKK1/DRD2 rs1800497	PharmGKB
Citalopram	CYP2C19	CPIC ¹⁵ ;FDA ³⁵



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Drug	Genetic Test	Sources
Clobazam	CYP2C19	FDA ³⁵
Clobazam	CYP2C9	Case-control studies ¹³
Clomipramine	CYP2D6	CPIC ¹⁶ ;FDA ³⁵
Clomipramine	CYP2C19	CPIC ¹⁶
Clonazepam	CYP2C9	Case-control studies ¹³
Clopidogrel	CYP2C19	CPIC ²⁰ ;FDA ³⁵
Clorazepate	CYP2C9	Case-control studies ¹³
Clozapine	CYP2D6	FDA ³⁵
Clozapine	ANKK1/DRD2 rs1800497	PharmGKB
Codeine	CYP2D6	CPIC ⁶ ;FDA ³⁵
Cyclosporine	СҮРЗА5	PharmGKB
Darifenacin	CYP2D6	FDA ³⁵
Desipramine	CYP2D6	CPIC ¹⁶ ;FDA ³⁵
Deutetrabenazine	CYP2D6	FDA ³⁵
Dexlansoprazole	CYP2C19	CPIC ²² ;FDA ³⁵
Diazepam	CYP2C19	FDA ³⁵
Diazepam	CYP2C9	Case-control studies ¹³
Donepezil	CYP2D6	FDA ³⁵
Doxepin	CYP2D6	CPIC ¹⁶ ;FDA ³⁵
Doxepin	CYP2C19	CPIC ¹⁶
Dronabinol	CYP2C9	FDA ³⁵
Elagolix	SLCO1B1	FDA ³⁵
Eliglustat	CYP2D6	DPWG ⁸ ;FDA ³⁵
Eltrombopag	Factor V rs6025	FDA ²⁸
Eltrombopag	Factor II rs1799963	PharmGKB





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Drug	Genetic Test	Sources
Erdafitinib	CYP2C9 (Star Alleles)	FDA ³⁵
Escitalopram	CYP2C19	CPIC ¹⁵ ;FDA ³⁵
Fentanyl	OPRM1 rs1799971	PharmGKB
Fesoterodine	CYP2D6	FDA ³⁵
Flecainide	CYP2D6	DPWG ⁸
Flibanserin	CYP2C19	FDA ³⁵
Flupentixol	ANKK1/DRD2 rs1800497	PharmGKB
Fluphenazine	ANKK1/DRD2 rs1800497	PharmGKB
Flurazepam	CYP2C9	Case-control studies ¹³
Flurbiprofen	CYP2C9 (Star Alleles)	CPIC ³² ;FDA ³⁵
Fluvastatin	CYP2C9	CPIC ⁵
Fluvastatin	SLCO1B1	CPIC ⁵
Fluvoxamine	CYP2D6	CPIC ¹⁵ ;FDA ³⁵
Fosphenytoin	CYP2C9	CPIC ¹⁸
Galantamine	CYP2D6	FDA ³⁵
Haloperidol	ANKK1/DRD2 rs1800497	PharmGKB
Hydrocodone	CYP2D6	CPIC ⁶
Ibuprofen	CYP2C9 (Star Alleles)	CPIC ³²
Iloperidone	CYP2D6	FDA ³⁵
Iloperidone	ANKK1/DRD2 rs1800497	PharmGKB
Imipramine	CYP2D6	CPIC ¹⁶ ;FDA ³⁵
Imipramine	CYP2C19	CPIC ¹⁶
Lansoprazole	CYP2C19	CPIC ²² ;FDA ³⁵
Lofexidine	CYP2D6	FDA ³⁵
Lorazepam	CYP2C9	Case-control studies ¹³



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Drug	Genetic Test	Sources
Lovastatin	SLCO1B1	CPIC ⁵
Loxapine	ANKK1/DRD2 rs1800497	PharmGKB
Lurasidone	ANKK1/DRD2 rs1800497	PharmGKB
Meclizine	CYP2D6	FDA ³⁵
Meloxicam	CYP2C9 (Star Alleles)	CPIC ³²
Methotrimeprazine	ANKK1/DRD2 rs1800497	PharmGKB
Metoclopramide	CYP2D6	FDA ³⁵
Metoprolol	CYP2D6	DPWG ⁸ ;FDA ³⁵
Mirabegron	CYP2D6	FDA ³⁵
Molindone	ANKK1/DRD2 rs1800497	PharmGKB
Morphine	OPRM1 rs1799971	PharmGKB ⁶
Nebivolol	CYP2D6	FDA ³⁵
Nitrazepam	CYP2C9	Case-control studies ¹³
Nortriptyline	CYP2D6	CPIC ¹⁶ ;FDA ³⁵
Olanzapine	ANKK1/DRD2 rs1800497	PharmGKB
Omeprazole	CYP2C19	CPIC ²² ;FDA ³⁵
Ondansetron	CYP2D6	CPIC ²
Oral contraceptives	Factor V rs6025	PharmGKB
Oral contraceptives	Factor II rs1799963	PharmGKB
Oxazepam	CYP2C9	Case-control studies ¹³
Paliperidone	ANKK1/DRD2 rs1800497	PharmGKB
Pantoprazole	CYP2C19	CPIC ²² ;FDA ³⁵
Paroxetine	CYP2D6	CPIC ¹⁵ ;FDA ³⁵
Perphenazine	CYP2D6	FDA ³⁵
Perphenazine	ANKK1/DRD2 rs1800497	PharmGKB



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Drug	Genetic Test	Sources
Phenytoin	CYP2C9	CPIC ¹⁸
Pimozide	CYP2D6	DPWG ⁸ ;FDA ³⁵
Pimozide	ANKK1/DRD2 rs1800497	PharmGKB
Piroxicam	CYP2C9 (Star Alleles)	CPIC ³² ;FDA ³⁵
Pitavastatin	SLCO1B1	CPIC ⁵
Pravastatin	SLCO1B1	CPIC ⁵
Prochlorperazine	ANKK1/DRD2 rs1800497	PharmGKB
Promethazine	ANKK1/DRD2 rs1800497	PharmGKB
Propafenone	CYP2D6	DPWG ⁸ ;FDA ³⁵
Propranolol	CYP2D6	FDA ³⁵
Protriptyline	CYP2D6	FDA ³⁵
Quetiapine	ANKK1/DRD2 rs1800497	PharmGKB
Risperidone	CYP2D6	DPWG ⁸
Rosuvastatin	SLCO1B1	CPIC ⁵ ;FDA ³⁵
Sertraline	CYP2C19	CPIC ¹⁵
Simvastatin	SLCO1B1	CPIC ⁵ ;FDA ³⁵
Siponimod	CYP2C9 (Star Alleles)	FDA ³⁵
Tacrolimus	СҮРЗА5	CPIC ³ ;FDA ³⁵
Tacrolimus	СҮРЗА4	PharmGKB
Tamoxifen	CYP2D6 (Activity Score)	Clinical trial ¹⁴ ;CPIC ¹¹ ;FDA ³⁵
Tamsulosin	CYP2D6	FDA ³⁵
Temazepam	CYP2C9	Case-control studies ¹³
Tenoxicam	CYP2C9 (Star Alleles)	CPIC ³²
Tetrabenazine	CYP2D6	FDA ³⁵
Thioridazine	CYP2D6	FDA ³⁵





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Drug	Genetic Test	Sources
Thioridazine	ANKK1/DRD2 rs1800497	PharmGKB
Tolterodine	CYP2D6	FDA ³⁵
Tramadol	CYP2D6	CPIC ⁶ ;FDA ³⁵
Triazolam	CYP2C9	Case-control studies ¹³
Trifluoperazine	ANKK1/DRD2 rs1800497	PharmGKB
Trimipramine	CYP2D6	CPIC ¹⁶ ;FDA ³⁵
Trimipramine	CYP2C19	CPIC ¹⁶
Valbenazine	CYP2D6	FDA ³⁵
Venlafaxine	CYP2D6	DPWG ⁸ ;FDA ³⁵
Voriconazole	CYP2C19	CPIC ²⁶ ;FDA ³⁵
Vortioxetine	CYP2D6	FDA ³⁵
Warfarin	CYP2C9	CPIC ¹⁷ ;FDA ³⁵
Warfarin	VKORC1	CPIC ¹⁷ ;FDA ³⁵
Ziprasidone	ANKK1/DRD2 rs1800497	PharmGKB
Zuclopenthixol	CYP2D6	DPWG ⁸
Zuclopenthixol	ANKK1/DRD2 rs1800497	PharmGKB



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.:: 4U Health



SPECIMEN DETAILS

BARCODE: 50000 SAMPLE ID: 50000 TYPE: SWAB COLLECTED: 31/Jan/2024 ORDERED BY DEMO, PHYSICIAN (4U HEALTH) GENERATED: 11/Mar/2024

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PATIENT INFORMATION NAME: DEMO PATIENT

DOB: 31/Jan/2024 SEX AT BIRTH: Male SPECIMEN DETAILS

BARCODE: 50000 SAMPLE ID: 50000 TYPE: SWAB COLLECTED: 31/Jan/2024 ORDERED BY

DEMO, PHYSICIAN (4U HEALTH) GENERATED: 11/Mar/2024

Methods

The results meet stringent quality control metrics for DNA isolation and genotyping. Array based assays detect listed alleles, including all common and most rare variants with known clinical significance at analytical sensitivity and specificity >99%.

Reference Lab Details: Name: Vision Laboratories Lab Director: Lekh Sharma, Ph.D., MT (AAB), TC (NRCC) CLIA: 44D2080585 Reference Lab Address: 6130 Shallowford Road #100, Chattanooga TN 37421 Phone: 1.844.484.3522 Website: http://www.visionlaboratories.com

Limitations

This test will not detect all the known mutations that result in altered or inactive tested genes. Absence of a detectable gene mutation or polymorphism does not rule out the possibility that a patient has intermediate or high sensitivity phenotypes due to the presence of an undetected polymorphism or due to drug-drug interactions. There may be other genetic factors impacting individual patient dosing that are not included in this test. The annotations and interpretations provided in this report are based on scientific literature and do not take into account drug-drug interactions, medical conditions or other clinical factors that may affect medication response. Gene-drug interactions are ranked according to guidelines, level of evidence and clinical utility. GenXys reports and TreatGx Clinical Decision Support are regularly updated. The current predicted phenotype and allele functionality may change in the future depending on new evidence. Phenotype annotations for CYP2C9 are based on total activity scores as defined by CPIC⁷⁹. Genetic test results and interpretation may be inaccurate for individuals who have undergone or are receiving non-autologous blood transfusion, tissue, or organ transplant therapies.

The report includes alleles of proteins involved in the metabolism of many medications. In rare cases, a variant that is not covered may be typed as *1 or other variants. In the case of pseudogenes and mutations in the untranslated regions of genes, incorrect allele typing may occur despite proper SNP detection. Preferential amplification of one allele over another present in the sample may also lead to incorrect genotyping.

Liability Disclaimer

This test was developed, and its performance characteristics determined by Vision Laboratories. It has not been cleared or approved by the US Food and Drug Administration. The report is not a diagnostic test, and TreatGx is not a prescribing system. You should discuss your pharmacogenetic information with a physician or other health care provider before you act upon the pharmacogenetic information resulting from this report. The medication brand names are not an exhaustive list and do not include combination therapies. Not all medications in this report are included in the TreatGx or ReviewGx software or other GenXys derivative works.

Vision Lab Director

11/Mar/2024

Lekh Sharma, PhD, TC (NRCC), Vision Lab Director, CLIA: 44D2080585, CAP: 9006075-01

Date of Signature





SPECIMEN DETAILS

BARCODE: 50000 SAMPLE ID: 50000 TYPE: SWAB COLLECTED: 31/Jan/2024 ORDERED BY DEMO, PHYSICIAN (4U HEALTH) GENERATED: 11/Mar/2024

Laboratory Report

The Laboratory Report contains your genetic results.

Gene	rsID	HGVS	HGVS Reference	Result
APOE	rs429358	c.388T>C	NC_000019.10	C/T
APOE	rs7412	c.526C>T	NC_000019.10	C/C
COMT	rs4680	c.472G>A	NC_000022.11	A/A
CYP1A2	rs12720461	c10+113C>T	NC_000015.10	C/C
CYP1A2	rs2069514	g.74745879G>A	NC_000015.10	G/G
CYP1A2	rs35694136	c1635T>-	NC_000015.10	Т/Т
CYP1A2	rs762551	c9-154A>C	NC_000015.10	A/A
CYP2B6	rs3745274	c.516G>A/T	NM_000767.5	G/G
CYP2C19	rs12248560	c806C>T	NM_000769.2	C/T
CYP2C19	rs28399504	c.1A>G	NM_000769.1	A/A
CYP2C19	rs41291556	c.358T>C	NM_000769.1	Т/Т
CYP2C19	rs4244285	c.681G>A	NM_000769.1	G/G
CYP2C19	rs4986893	c.636G>A	NM_000769.1	G/G
CYP2C19	rs72552267	c.395G>A	NM_000769.1	G/G
CYP2C19	rs17884712	c.431G>A	NM_000769.1	G/G
CYP2C19	rs6413438	c.680C>T	NM_000769.1	C/C
CYP2C19	rs72558186	g.19294T>A	NM_000769.1	Т/Т
CYP2C9	rs1057910	c.1075A>C	NM_000771.3	A/A
CYP2C9	rs1799853	c.430C>T	NM_000771.3	C/T
CYP2C9	rs28371685	c.1003C>T	NM_000771.3	C/C
CYP2C9	rs28371686	c.1080C>G	NM_000771.3	C/C
CYP2C9	rs9332131	c.817delA	NM_000771.3	A/A
CYP2C9	rs56165452	c.1076T>C	NM_000771.3	Т/Т
CYP2C9	rs7900194	c.449G>A/C/T	NM_000771.4	G/G
CYP2D6	rs1065852	c.100C>T	NM_000106.5	G/G
CYP2D6	rs16947	c.886C>T	NM_000106.5	G/G
CYP2D6	rs28371706	c.320C>A	NM_000106.5	G/G
CYP2D6	rs28371725	c.985+39G>A	NM_000106.5	C/C
CYP2D6	rs35742686	c.775delA	NM_000106.5	Т/Т
CYP2D6	rs3892097	c.506-1G>A	NM_000106.5	C/C
CYP2D6	rs5030655	c.454delT	NM_000106.5	A/A
CYP2D6	rs5030656	c.841_843delAAG	NM_000106.5	CTT/CTT
CYP2D6	rs5030867	c.971A>C	NM_000106.5	Т/Т
CYP2D6	rs59421388	c.1012G>A	NM_000106.5	C/C
CYP2D6	rs5030862	g.124G>A	NM_000106.5	C/C



NAME: DEMO PATIENT DOB: 31/Jan/2024 SEX AT BIRTH: Male

SPECIMEN DETAILS

BARCODE: 50000 SAMPLE ID: 50000 TYPE: SWAB COLLECTED: 31/Jan/2024

DEMO, PHYSICIAN (4U HEALTH) GENERATED: 11/Mar/2024

				- ·
Gene	rsID	HGVS	HGVS Reference	Result
CYP2D6	rs5030865	g.1758G>T,G>A	NM_000106.5	C/C
CYP2D6	rs769258	c.31G>A	NM_000106.6	C/C
CYP2D6	rs1080985	c1584C>G	NC_000022.11	G/G
CYP3A4	rs2740574	c392T>C	NC_000007.14	T/T
CYP3A4	rs35599367	c.522-191G>A	NC_000007.14	G/G
CYP3A5	rs10264272	c.624G>A	NM_000777.4	C/C
CYP3A5	rs41303343	c.1035_1036insT	NM_000777.4	A/A (-/-) ¹
CYP3A5	rs776746	c.219-237G>A	NM_000777.4	C/C
CYP3A5	rs28365083	g.27289C>A	NM_000777.4	G/G
DRD2;ANKK1	rs1800497	c.2137G>A	NM_178510.2	G/G
Factor II	rs1799963	c.*97G>A	NM_000506.4	G/G
Factor V	rs6025	c.1601G>A	NM_000130.4	C/C
ITGB3	rs5918	c.176T>C	NM_000212.3	Т/Т
LPA	rs3798220	c.5673A>G	NM_005577.4	Т/Т
LPA	rs10455872	c.3947+467T>C	NM_005577.4	A/G
MTHFR	rs1801131	c.1409T>G	NC_000001.11	Т/Т
MTHFR	rs1801133	c.788G>A	NC_000001.11	G/A
OPRM1	rs1799971	c.118A>G	NM_000914.5	G/G
SLCO1B1	rs4149056	c.521T>C	NM_006446.4	Т/Т
TPMT	rs1142345	c.719A>G/C	NM_000367.3	Т/Т
TPMT	rs1800460	c.460G>A	NM_000367.3	C/C
TPMT	rs1800462	c.238G>C	NM_000367.3	C/C
VKORC1	rs9923231	c1639G>T	NM_001311311.1	A/A (T/T) ¹

1: Pharmacogenetic testing may occasionally lead to unusual genotypes. In these situations pharmacogenetic laboratories will sometimes report on alternative genotypes. If this is done then both genotypes appear in the result table; a genotype in () is the alternative genotype chosen by the lab.

Copy Number Variation

Gene	Reference	Result
CYP2D6	NG_008376.3 exon 9	3

Phenotype Table

Gene	Allele Result	Phenotype Result
CYP2D6	(*1/*1)3N	Ultrarapid Metabolizer
CYP2C9	*1/*2	Intermediate Metabolizer
CYP2C19	*1/*17	Rapid Metabolizer
CYP3A4	*1A/*1A	Normal Metabolizer
CYP3A5	*3/*3	Poor Metabolizer
SLC01B1	*1/*1	Normal Function
ТРМТ	*1/*1	Normal Metabolizer

