

SPECIMEN DETAILS BARCODE: TST-DL-SAMPLE SAMPLE ID: 00001 TYPE: DBS COLLECTED: 13/Aug/2024 ORDERED BY Nordic Laboratories REPORT GENERATED: 13/Aug/2024

This pharmacogenetic information is based on best evidence compiled from guidelines and databases including the FDA Table of Pharmacogenetic Associations and the Clinical Pharmacogenetics Implementation Consortium (CPIC). Please refer to the Methods, Limitations, and Liability Disclaimer at the end of this report.

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.

- Mild or no known interaction
- Moderate gene-drug interaction
- Serious drug-gene interaction: evaluate and consider alternative medications

...Autoimmune

Methotrexate

Siponimod

Analgesia
<u> </u>
Carisoprodol
Hydrocodone
2
Alfentanil
Celecoxib
Fentanyl
Flurbiprofen
Ibuprofen
Meloxicam
Morphine
Oliceridine
Piroxicam
Tenoxicam
Venlafaxine
3
Amitriptyline
Codeine
Desipramine

- Codeine Desipramine Imipramine Nortriptyline Tramadol Autoimmune
- <u>^</u>____
- Tacrolimus
- 2 Cyclosporine

Cancer Cancer Erdafitinib 2 Gefitinib Methotrexate 3 Tamoxifen Cardiovascular

Α

2

Atorvastatin Clopidogrel Lovastatin Mavacamten Nebivolol Pitavastatin Pravastatin Propranolol Rosuvastatin Simvastatin

Carvedilol Flecainide Fluvastatin Propafenone Warfarin

Cardiovascula	ar
3	
Metoprolol	
Endocrinology	
<u>^</u>	
Nateglinide	
Gastroenterolo	gy
<u>^</u>	
Esomeprazole	
Ondansetron	
Rabeprazole	
2	
Dexlansoprazole	
Dronabinol	
Lansoprazole	
Meclizine	
Methotrexate	
Metoclopramide	
Omeprazole	
Pantoprazole	
Infection	
<u>^</u>	
Efavirenz	
Voriconazole	
Mental Health	
<u>^</u>	
Amoxapine	
Citalopram	

Diazepam

Escitalopram

Δ Methylphenidate Nicotine replacement therapy Protriptyline Quetiapine Sertraline Viloxazine Α Amphetamine Aripiprazole Aripiprazole lauroxil Atomoxetine Brexpiprazole Bupropion Clozapine Fluvoxamine Haloperidol Iloperidone Lofexidine Paroxetine Perphenazine Pimozide Risperidone Venlafaxine Vortioxetine Zuclopenthixol 3 Amitriptyline

...Mental Health

Amitriptyline Clomipramine

medcheck from **dnalife**

PATIENT INFORMATION

NAME: Sample Patient DOB: 01/Jan/1970 SEX AT BIRTH: Male

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...Mental Health

3 Desipramine Doxepin Imipramine Nortriptyline Thioridazine Trimipramine

Neurology

Δ Brivaracetam Clobazam Diazepam Donepezil Galantamine Propranolol

2

Deutetrabenazine Fosphenytoin Phenytoin Pitolisant Tetrabenazine Valbenazine Venlafaxine

3

Amitriptyline Metoprolol

Rheumatology 2

Celecoxib Flurbiprofen Ibuprofen Meloxicam Methotrexate Piroxicam Tenoxicam

Urology

Δ Darifenacin Fesoterodine Mirabegron

Tamsulosin 2

Tolterodine



Abrocitinib Avatrombopag Elagolix

Eltrombopag Flibanserin Lusutrombopag Oral contraceptives

2 Cevimeline

3

Eliglustat





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Overview

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

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.

ReviewG_×

<u>ReviewGx</u>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 Phenotype		Genetic Test	Results	Source/Evidence
Generic Name	Codeine Co	ntin Poor metabolizer	CYP2D6	*3/*6	CPIC A ⁶ ; FDA 1 ³⁴
Brand Names	Tylenol with Codeine No 2/3/4	Implication:	CYP2D6 poor metabolize of Codeine may result in	r: greatly reduced respectively of the section of t	ced metabolism oonse
Potential Kidney	. କ୍ରୋଡ	<u>3</u>	Avoid Codeine use		
or Liver Interaction	••				
	TreatG≭ 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 https://www.pharmgkb.org/page/clinAnnLevels 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.



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Medication Report

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.

Abrocitinib	Phenotype	Genetic Test	Results	Source/Evidence		
Cibinqo Gli	Normal metaboliz	er CYP2C19	*1/*1	FDA 1 ³⁴ ; Product monograph (actionable) ²⁷		
₽ ReviewG _%	Implication:	FDA PGx Table: no informatio	n for this phenotype			
Alfentanil	Phenotype	Genetic Test	Results	Source/Evidence		
Alfenta	Increased analges	sic response OPRM1 rs1799	971 A/A	PharmGKB 3		
		Tharmok – Clinical Annotation (Level 3 Encacy): Patients with the OPRM1 rs1799971 A/A genotype may have an increased analgesic response to alfentanil as compared to patients with the A/G or G/G genotypes. Note that one study reported a non- significant association. This drug-variant pair has been assigned a "no recommendation" by CPIC, as it was determined to be not clinically actionable. Other genetic or clinical factors may also affect a patient's response to alfentanil. PharmGKB – Clinical Annotation (Level 3 Dosage): Patients with the OPRM1 rs1799971 A/A genotype may have reduced alfentanil dose requirements as compared to patients with the A/G or G/G genotypes. This drug-variant pair has been assigned a "no recommendation" by CPIC, as it was determined to be not clinically actionable. Other genetic or clinical factors may also				
Amitriptyline	Phenotype	Genetic Test	Results	Source/Evidence		
Elavil	Poor metabolizer	CYP2D6	*4/*4	CPIC A ¹⁶ ; FDA 3 ³⁴		
Levate	Normal metaboliz	er CYP2C19	*1/*1	CPIC A ¹⁶		
TreatG☆ ReviewG☆	Implication:	CYP2D6 poor metabolizer: greatly reduced metabolism of Amitriptyline to less active compounds Higher plasma concentrations of active drug may increase the risk of adverse drug reactions				
		Avoid Amitriptyline use. If use is warranted, consider a reduction of recommended starting dose (per CPIC strong recommendation). Refer to TreatGx for alternatives and specific dosing recommendations.				
Amoxapine	Phenotype	Genetic Test	Results	Source/Evidence		
ReviewG _%	Poor metabolizer	CYP2D6	*4/*4	FDA 3 ³⁴		
	Implication:	FDA PGx Table Section 3 – Po Properties Only: May alter sys	tential Impact on Ph stemic concentration	armacokinetic s.		



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Amphetamine	Phenotype		Genetic Test	Results	Source/Evidence			
Adzenys	Poor metabolizer		CYP2D6	*4/*4	FDA 1 ³⁴			
TreatGx ReviewGx	Implication:	CYP2D6 poor Amphetamine	metabolizer: greatly to less active comp	v reduced metal	polism of			
		Higher plasma of adverse dru	Higher plasma concentrations of active drug may increase the risk of adverse drug reactions Consider a lower starting dose or use an alternative drug not predominantly metabolized by CYP2D6					
	2	Consider a low predominantly						
		This drug has monograph or	an FDA therapeutic FDA labelling for de	recommendationsing recommendations	on, refer to drug ndations			
Aripiprazole	Phenotype		Genetic Test	Results	Source/Evidence			
Abilify	Poor metabolizer		CYP2D6	*4/*4	DPWG ¹⁰ ; FDA 1 ³⁴			
TreatGx ReviewGx	Implication: 🛕	FDA PGx Table Recommenda higher advers Refer to FDA I	e Section 1 – CYP2D tions: Results in hig e reaction risk. Dosa abeling for specific o	6 Therapeutic N her systemic co age adjustment dosing recomm	lanagement ncentrations and is recommended. endations.			
Aripiprazole lauroxil	Phenotype		Genetic Test	Results	Source/Evidence			
Aristada	Poor metabolizer		CYP2D6	*4/*4	FDA 1 ³⁴			
TreatGx ReviewGx	Implication: 🛕	FDA PGx Table Section 1 – CYP2D6 Therapeutic Management Recommendations: Results in higher systemic concentrations. Dosage adjustment is recommended. Refer to FDA labeling for specific dosing recommendations.						
Atomoxetine	Phenotype		Genetic Test	Results	Source/Evidence			
Strattera	Poor metabolizer		CYP2D6 (Activity	*4/*4	CPIC A ⁶ ; FDA 1 ³⁴			
P TreatG:	Implication:	CYP2D6 poor metabolizer: greatly reduced metabolism of Atomoxetine to less active compounds						
ReviewGx		 Higher plasma concentrations of active drug may increase the risk of adverse drug reactions Strong CPIC recommendation: Increase the daily dose only if symptoms fail to improve after 14 days and previous dose is well tolerated, consider obtaining a plasma concentration 2-4 h after dosing. If response is inadequate and concentration is <200 ng/ml, consider a proportional dose increase to achieve a concentration to approach 400 ng/ml. 						
Atorvastatin	Phenotype		Genetic Test	Results	Source/Evidence			
Lipitor	Normal function		SLCO1B1	*1/*1	CPIC A ⁷ ; FDA 3 ³⁴			
₽ TreatGx	Implication:	CPIC – Implic exposure.	CPIC – Implication: Typical myopathy risk and Atorvastatin exposure.					
ReviewG _%		CPIC – Strong Recommendation: Prescribe desired starting dose and adjust doses based on disease-specific guidelines. The potential for drug-drug interactions and dose limits based on renal and hepatic function and ancestry should be evaluated prior to initiating a statin.						



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Avatrombopag	Phenotype		Genetic Test	Results	Source/Evidence
Doptelet	Intermediate met	abolizer	CYP2C9	*1/*3	FDA 3 ³⁴
ReviewG %	Normal Factor II		Factor II rs1799963	G/G	Product monograph (actionable) ¹
	Normal Factor V L	eiden	Factor V rs6025	C/C	Product monograph (actionable) ¹
	Implication:	FDA PGx Ta Pharmacok concentrati	able Section 3 – CYP2C9 inetic Properties Only: Re ons.	Potential Impa esults in highe	act on er systemic
		Product mo (i.e. Prothr	onograph: no change in r ombin 20210A mutation	isk stated for absent).	normal Factor II
		Product mo	nograph: no change in r	isk stated for	normal Factor V.
Brexpiprazole	Phenotype		Genetic Test	Results	Source/Evidence
Rexulti	Poor metabolizer		CYP2D6	*4/*4	DPWG ¹⁰ ; FDA 1 ³⁴
¶ ₽ TreatG‰ ReviewG‰	Implication: 🛕	FDA PGx Ta Recommen Dosage adj specific dos	able Section 1 – CYP2D6 dations: Results in highe ustment is recommender sing recommendations.	Therapeutic M r systemic cor d. Refer to FD	lanagement ncentrations. A labeling for
Brivaracetam	Phenotype		Genetic Test	Results	Source/Evidence
Briviact	Normal metaboliz	er	CYP2C19	*1/*1	FDA 1 ³⁴
• _l ∙ <i>■</i> - ReviewG:×	Implication			nges nom rec	ommended dose
Bupropion	Phenotype		Genetic Test	Results	Source/Evidence
Wellbutrin Zyban	Less likely to quit compared to G/G	smoking	ANKK1/DRD2 rs1800497	A/G	PharmGKB 3
● TreatG [*] ReviewG [*]	Implication: A PharmGKB – Clinical Annotation (Level 3 Efficacy): Patients with the ANKK1 rs1800497 A/G genotype who are treated with bupropion may be less likely to quit smoking as compared to patients with the G/G genotype, however contradictory findings about abstinence exist. Other genetic and clinical factors may also influence a patient's chance for quitting smoking.				
Carisoprodol	Phenotype		Genetic Test	Results	Source/Evidence
ReviewGx	Normal metaboliz	er	CYP2C19	*1/*1	FDA 3 ³⁴
	Implication:	CYP2C19 a	lleles do not indicate cha	nges from rec	ommended dose
Carvedilol	Phenotype		Genetic Test	Results	Source/Evidence
Coreg	Poor metabolizer		CYP2D6	*4/*4	FDA 2 ³⁴
₽ TreatGx	Implication:	CYP2D6 po Carvedilol 1	or metabolizer: greatly r to less active compounds	educed metab	olism of
ReviewG [*]		Higher plas of adverse	ma concentrations of act drug reactions (dizziness	tive drug may 5)	increase the risk
	2	Data indica	te a potential impact on	patient safety	



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Celecoxib	Phenotype		Genetic Test	Results	Source/Evidence			
Celebrex	Intermediate met 1.0)	abolizer (AS	CYP2C9 (Star All	eles) *1/*3	CPIC A ³³ ; FDA 1 ³⁴			
	Implication:	CYP2C9 inte reduced met	rmediate metabolize abolism of Celecoxi	nediate metabolizer with an activity score of 1.0: bolism of Celecoxib to less active compounds				
IreatGx ReviewGx		Higher plasn of adverse d	na concentrations of rug reactions	factive drug may i	ncrease the risk			
	2	Initiate there	apy with the lowest	recommended dos	e of Celecoxib			
Cevimeline	Phenotype		Genetic Test	Results	Source/Evidence			
Evoxac	Poor metabolizer		CYP2D6	*4/*4	FDA 2 ³⁴			
ReviewG _×	Implication:	CYP2D6 poo Cevimeline t	r metabolizer: great o less active compo	ly reduced metabo unds	blism of			
		Higher plasma concentrations of active drug may increase the risk of adverse drug reactions						
	2	Data indicate	e a potential impact	on patient safety				
Citalopram	Phenotype		Genetic Test	Results	Source/Evidence			
Celexa	Normal metaboliz	er	CYP2C19	*1/*1	CPIC A ⁵ ; FDA 1 ³⁴			
•	Implication:	Normal CYP2	2C19 metabolism					
TreatG≭ ReviewG≭		Initiate thera recommenda	apy with recommended starting dose (per CPIC strong ation).					
Clobazam	Phenotype		Genetic Test	Results	Source/Evidence			
Onfi	Normal metaboliz	er	CYP2C19	*1/*1	FDA 1 ³⁴			
Sympazan	Implication:	FDA PGx Tab	ble: no information for this CYP2C19 phenotype.					
ReviewG≍								
Clomipramine	Phenotype		Genetic Test	Results	Source/Evidence			
Anafranil	Poor metabolizer		CYP2D6	*4/*4	CPIC B ¹⁶ ; FDA 3 ³⁴			
ReviewGx	Normal metaboliz	er	CYP2C19	*1/*1	CPIC B ¹⁶			
	Implication:	CYP2D6 poo Clomipramin Higher plasn of adverse d	or metabolizer: greatly reduced metabolism of ne to less active compounds ma concentrations of active drug may increase the risk drug reactions					
	3	Avoid Clomipramine use. If use is warranted, consider a reduction of recommended starting dose (per CPIC optional recommendation). Refer to TreatGx for alternatives and specific dosing recommendations.						
Clopidogrel	Phenotype		Genetic Test	Results	Source/Evidence			
Plavix	Normal metaboliz	er	CYP2C19	*1/*1	CPIC A ¹⁹ ; FDA 1 ³⁴			
TreatGx ReviewGx	Implication:	CYP2C19 all	eles do not indicate	changes from reco	ommended dose			



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Clozapine	Phenotype	Genetic Test	Results	Source/Evidence			
Clozaril	Poor metabolizer	CYP2D6	*4/*4	FDA 1 ³⁴			
Fazaclo ODT Versacloz TreatG% ReviewG%	Implication: 🛕	FDA PGx Table Section 1 – CYP2D6 Therapeutic Management Recommendations: Results in higher systemic concentrations. Dosage reductions may be necessary.					
Codeine	Phenotype	Genetic Test	Results	Source/Evidence			
Codeine Contin Tylenol with Codeine No. 2/3/4	Poor metabolizer Implication:	CYP2D6 CYP2D6 poor metabolizer: grea	*4/*4 atly reduced metab	CPIC A ⁸ ; FDA 1 ³⁴ ; FDA 2 ³⁴ blism of Codeine			
•∩• ₽ TreatG% ReviewG%		to active metabolite may result in diminished analgesia Avoid Codeine use due to possibility of diminished analgesia. If opioid use is warranted, consider an opioid other than tramadol or codeine (per CPIC strong recommendation). Refer to TreatGx for alternatives and specific dosing recommendations.					
Cyclosporine	Phenotype	Genetic Test	Results	Source/Evidence			
Neoral Sandimmune ReviewG:	Poor metabolizer Implication:	CYP3A5 *3/*3 PharmGKB 3 PharmGKB – Clinical Annotation (Level 3 Dosage): Patients who are recipients of a kidney transplant and who carry the *3 allele in combination with another no function allele may have decreased cyclosporine dose requirements as compared to patients carrying two normal function alleles or a normal function allele in combination with a potential patients patients carrying					
Darifenacin	Phenotype	evidence has been reported. Of also affect cyclosporine dose re provide information about othe without *3 i.e. *6/*6, *7/*7, * Genetic Test	nical factors may nGKB does not diplotypes Source/Evidence				
Enablex	Poor metabolizer	CYP2D6	*4/*4	EDA 3 ³⁴			
₽ TreatG≍ ReviewG≍	Implication:	CYP2D6 poor metabolizer: reduced metabolism of Darifenacin leads to higher plasma concentrations There is a potential impact on pharmacokinetic properties. The impact of CYP2D6 variants on the safety of Darifenacin has not been established					
Desipramine	Phenotype	Genetic Test	Results	Source/Evidence			
Norpramin TreatGx ReviewGx	Poor metabolizer Implication:	CYP2D6 *4/*4 CPIC B ¹⁶ ; FDA 3 ³⁴ CYP2D6 poor metabolizer: greatly reduced metabolism of Desipramine to less active compounds Higher plasma concentrations of active drug may increase the risk of adverse drug reactions Avoid Desipramine use due to potential for adverse effects. Consider alternative drug not metabolized by CYP2D6. If use is warranted, consider a reduction of the recommended dose (per CPIC optional recommendation). Refer to TreatGx for alternatives and specific dosing recommendations.					



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Deutetrabenazine	Phenotype	Genetic Test	Results	Source/Evidence				
Austedo	Poor metabolizer	CYP2D6	*4/*4	FDA 1 ³⁴				
₽ ReviewG%	Implication:	Implication:CYP2D6 poor metabolizer: greatly reduced metabolism of Deutetrabenazine to less active compounds						
		Higher plasma concentrations of active drug may increase the risk of QT prolongation						
	2	2 Consider a reduction of maximum daily dose						
	2	This drug has an FDA theraped monograph or FDA labelling fo	itic recommendation r dosing recommen	n, refer to drug dations				
Dexlansoprazole	Phenotype	Genetic Test	Results	Source/Evidence				
Dexilant	Normal metaboliz	er CYP2C19	*1/*1	CPIC B ²⁰ ; FDA 3 ³⁴				
₽ ₽ TreatG% ReviewG%	Implication:	CPIC – Implication: Normal PP risk of therapeutic failure comp CPIC – Moderate Recommenda dose. Consider increasing dose Helicobacter pylori infection an may be given in divided doses.	I metabolism; may pared with CYP2C19 ition: Initiate standa by 50-100% for th d erosive esophagit Monitor for efficac	be at increased IMs and PMs. ard starting daily he treatment of cis. Daily dose y.				
Diazepam	Phenotype	Genetic Test	Results	Source/Evidence				
Diastat	Normal metaboliz	er CYP2C19	*1/*1	FDA 3 ³⁴				
Valium	Implication:	FDA PGx Table: no information	for this CYP2C19 p	henotype.				
TreatG: ReviewG: Donepezil	Phenotype	Genetic Test	Results	Source/Evidence				
Aricept	Poor metabolizer	CYP2D6	*4/*4	FDA 3 ³⁴				
TreatG≭ ReviewG≭	Implication:	Donepezil to centrations of operties. The ezil has not						
Doxepin	Phenotype	Genetic Test	Results	Source/Evidence				
Silenor	Poor metabolizer	CYP2D6	*4/*4	CPIC B ¹⁶ ; FDA 3 ³⁴				
Sinequan	Normal metaboliz	er CYP2C19	*1/*1	CPIC B ¹⁶ ; FDA 3 ³⁴				
■• TreatG [•] ReviewG [•]	Implication:	CYP2D6 poor metabolizer: great to less active compounds Higher plasma concentrations of adverse drug reactions	atly reduced metab	olism of Doxepin increase the risk				
		Avoid Doxepin use. If use is wa recommended starting dose (p Refer to TreatGx for alternative recommendations.	Avoid Doxepin use. If use is warranted, consider a reduction of recommended starting dose (per CPIC optional recommendation). Refer to TreatGx for alternatives and specific dosing recommendations.					



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Dronabinol	Phenotype		Genetic Test	Results	Source/Evidence			
Marinol	Intermediate me	tabolizer	CYP2C9	*1/*3	FDA 1 ³⁴			
ReviewG:	Implication:	Implication:CYP2C9 intermediate metabolizer: reduced metabolism of Dronabinol to less active compounds						
		Higher plasma concentrations of active drug may increase the risk of adverse drug reactions						
	<u>k</u>	This drug l monograpl	nas an FDA therapeutic n or FDA labelling for d	c recommendation osing recommen	n, refer to drug dations			
Efavirenz	Phenotype		Genetic Test	Results	Source/Evidence			
Sustiva	Normal metaboli	zer	CYP2B6	*1/*1	CPIC A ⁹ ; FDA 2 ³⁴			
er.	Implication:	CYP2B6 all	eles do not indicate ch	anges from reco	mmended dose			
ReviewG [*]								
Elagolix	Phenotype		Genetic Test	Results	Source/Evidence			
Orilissa	Normal function		SLCO1B1	*1/*1	FDA 3 ³⁴			
P *	Implication:	SLCO1B1 a	alleles indicate a typica	I response to Ela	golix			
ReviewG %								
Eliglustat	Phenotype		Genetic Test	Results	Source/Evidence			
Cerdelga	Poor metabolizer	-	CYP2D6	*4/*4	FDA 1 ³⁴			
6 ₁ 3 P 7	Implication:	CYP2D6 pc Eliglustat t	oor metabolizer: greatly o less active compound	y reduced metab ds	olism of			
ReviewGx		Higher plas of adverse	Higher plasma concentrations of active drug may increase the risk of adverse drug reactions					
		Consider ro labelling fo	educing eliglustat dose or dosing recommendat	, refer to drug m tions	onograph or FDA			
		Concurrent use of a st	t use of a mild, modera rong CYP3A inducer: A	ate or strong CYP void Eliglustat us	3A inhibitor, or e			
Eltrombopag	Phenotype		Genetic Test	Results	Source/Evidence			
Promacta	Normal Factor V	Leiden	Factor V rs6025	C/C	Product monograph			
	Implication:	Product m	onograph: no change i	n risk stated for i	ormal Factor V.			
ReviewG _%								
Erdafitinib	Phenotype		Genetic Test	Results	Source/Evidence			
Balversa	Intermediate me	tabolizer	CYP2C9 (Star Alle	les) *1/*3	FDA 1 ³⁴			
ReviewG _≭	Implication:	CYP2C9 all	eles do not indicate ch	anges from reco	mmended dose			
Escitalopram	Phenotype		Genetic Test	Results	Source/Evidence			
Cipralex	Normal metaboli	zer	CYP2C19	*1/*1	CPIC A ⁵ ; FDA 3 ³⁴			
Lexapro	Implication:	Normal CY	P2C19 metabolism					
▼ TreatG☆ ReviewG☆		Initiate the recommen	erapy with recommend dation).	ed starting dose	(per CPIC strong			



 PATIENT INFORMATION
 SPECI

 NAME: Sample Patient
 BARCI

 DOB: 01/Jan/1970
 SAMP

 SEX AT BIRTH: Male
 TYPE:

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EsomeprazolePhenotypeGenetic TestResultsSource/EvidenceNexiumNormal metabolizerCYP2C19*1/*1FDA 3³⁴PImplication:FDA PGx Table: no information for this phenotype.FDA 3³⁴TreatG%
ReviewG%ReviewG%FDA PGx Table: no information for this phenotype.FDA 3³⁴

Fentanyl	Phenotype	Genetic Test	Results	Source/Evidence	
Actiq	Decreased analgesic response	OPRM1 rs1799971	A/A	PharmGKB 3	
Duragesic Fentora Sublimaze M ReviewG:	Implication: A PharmGKB the OPRM1 analgesic r A/G or G/G reported. T recommend clinically ad affect resp PharmGKB the OPRM1 dose requir genotype. I drug-variar CPIC, as it genetic or or requirement	 Clinical Annotation (L rs1799971 A/A genotypesponse to fentanyl as c genotypes. However, co his drug-variant pair ha dation" by CPIC, as it wa tionable. Other genetic onse to fentanyl. Clinical Annotation (L rs1799971 A/A genotypements as compared to However, conflicting evident pair has been assigned was determined to be n clinical factors may also ths. 	evel 3 Efficacy) be may have a ompared to pa onflicting evide s been assigne as determined to or clinical facto evel 3 Dosage) be may have de patients with t lence has been d a "no recomr ot clinically act affect fentanyl	: Patients with decreased tients with the nce has been d a "no to be not ors may also : Patients with ecreased fentanyl the G/G reported. This nendation" by ionable. Other dose	

Fesoterodine	Phenotype	Genetic Test	Results	Source/Evidence			
Toviaz	Poor metabolizer	CYP2D6	*4/*4	FDA 3 ³⁴			
G _I B P	Implication:	CYP2D6 poor metabolizer: reduce leads to higher plasma concentry	Fesoterodine				
TreatG≭ ReviewG≭		There is a potential impact on pharmacokinetic properties. The impact of CYP2D6 variants on the safety of Fesoterodine has not been established					
Flecainide	Phenotype	Genetic Test	Results	Source/Evidence			
Tambocor	Poor metabolizer	CYP2D6	*4/*4	DPWG ¹⁰			
€ _] •) ₽*	Implication:	CYP2D6 poor metabolizer: greatly reduced metabolism of Flecainide to less active compounds					
TreatG☆ ReviewG☆		Higher plasma concentrations of active drug may increase the risk of adverse drug reactions					

Reduce the standard dose by 50%, record electrocardiogram, and monitor plasma concentration

Flibanserin	Phenotype	G	enetic Test	Results	Source/Evidence			
Addyi	Normal metaboli	zer C`	YP2C19	*1/*1	FDA 1 ³⁴			
•	Implication:	CYP2C19 alleles	CYP2C19 alleles do not indicate changes from recommended dose					
ReviewGx								



SPECIMEN DETAILS BARCODE: TST-DL-SAMPLE SAMPLE ID: 00001 TYPE: DBS COLLECTED: 13/Aug/2024 ORDERED BY Nordic Laboratories REPORT GENERATED: 13/Aug/2024

Flurbiprofen	Phenotype		Genetic Test	Results	Source/Evidence	
Ansaid €µ€	Intermediate me 1.0)	tabolizer (AS	CYP2C9 (Star Alle	eles) *1/*3	CPIC A ³³ ; FDA 1 ³⁴	
[∎] TreatGx ReviewGx	Implication:	CYP2C9 intermediate metabolizer with an activity score of 1.0: reduced metabolism of Flurbiprofen to less active compounds				
		Higher plasm of adverse dr	a concentrations of ug reactions	active drug may	increase the risk	

2 Initiate therapy with the lowest recommended dose of Flurbiprofen

Fluvastatin	Phenotype	Genetic Test	Results	Source/Evidence
Lescol	Intermediate metabolizer	CYP2C9	*1/*3	CPIC A ⁷
P *	Normal function	SLCO1B1	*1/*1	CPIC A ⁷

 TreatGx
 Implication:
 CPIC – CYP2C9 Implication: Increased fluvastatin exposure as compared with normal metabolizer, which may translate to increased myopathy risk.

 CPIC – CYP2C9 Implication: Turning the provide the provided of the provided

CPIC – SLCO1B1 Implication: Typical myopathy risk and Fluvastatin exposure.

CPIC - Moderate Recommendation: Prescribe ≤40 mg per day as a starting dose and adjust doses of fluvastatin based on diseasespecific guidelines. If dose >40 mg needed for desired efficacy, consider an alternative statin or combination therapy (i.e., fluvastatin plus non-statin guideline-directed medical therapy). The potential for drug-drug interactions and dose limits based on renal and hepatic function should be evaluated prior to initiating a statin. The effects of drug-drug interactions may be more pronounced, resulting in a higher risk of myopathy.

Fluvoxamine	Phenotype		Genetic Test	Results	Source/Evidence					
Luvox	Poor metabolizer		CYP2D6	*4/*4	CPIC B ⁵ ; FDA 3 ³⁴					
✔ TreatGx ReviewGx	Implication:	Greatly red compounds Higher plas effects	Greatly reduced metabolism of fluvoxamine to less active compounds when compared with CYP2D6 normal metabolizers. Higher plasma concentrations may increase the probability of side effects							
		Consider a schedule as clinically ap metabolize	nsider a 25–50% lower starting dose and slower titration iedule as compared with normal metabolizers or consider a nically appropriate alternative antidepressant not predominantly etabolized by CYP2D6 (per CPIC optional recommendation).							
Fosphenytoin	Phenotype		Genetic Test	Results	Source/Evidence					
Cerebyx	Intermediate meta	abolizer	CYP2C9	*1/*3	CPIC A ¹⁸ ; FDA 1 ³⁴					
6 ₁ €	Implication:	CYP2C9 int reduced me	C9 intermediate metabolizer with an activity score of 1.0: ced metabolism of Fosphenytoin to less active compounds							
ReviewGx		Higher plas adverse rea	sma concentrations m actions	ay increase the ri	sk of cutaneous					
	2	For first dose, use typical initial dose. Consider a 25% reduction								

for subsequent doses



SPECIMEN DETAILS BARCODE: TST-DL-SAMPLE SAMPLE ID: 00001 TYPE: DBS COLLECTED: 13/Aug/2024

Galantamine	Phenotype		Genetic Test	Results	Source/Evidence				
Razadyne	Poor metabolizer		CYP2D6	*4/*4	FDA 3 ³⁴				
	Implication:	Galantamine to centrations of							
ReviewGx		There is a po impact of CY been establis	There is a potential impact on pharmacokinetic properties. The impact of CYP2D6 variants on the safety of Galantamine has not been established						
		Titrate dose	based on tolerabilit	У					
Gefitinib	Phenotype		Genetic Test	Results	Source/Evidence				
Iressa	Poor metabolizer		CYP2D6	*4/*4	FDA 1 ³⁴				
ReviewG x	Implication: 🛕	FDA PGx Tab Recommend higher adver Monitor for a	DA PGx Table Section 1 – Therapeutic Management ecommendations: Results in higher systemic concentrations and igher adverse reaction risk. Ionitor for adverse reactions.						
Haloperidol	Phenotype		Genetic Test	Results	Source/Evidence				
Haldol	Poor metabolizer		CYP2D6	*4/*4	DPWG ¹⁰				
TreatG≭ ReviewG≭	Implication: 🛕	DWPG – Description: There are indications for an increased risk of side effects. The CYP2D6 genetic variation leads to decreased conversion of haloperidol, resulting in plasma concentrations that are approximately 1.7-fold higher. DPWG – CYP2D6 Recommendation: Use 60% of the normal dose.							
Hydrocodone	Phenotype		Genetic Test	Results	Source/Evidence				
Hysingla	Poor metabolizer		CYP2D6	*4/*4	CPIC B ⁸				
Zohydro	Implication:	CYP2D6 poor metabolizer: reduced metabolism of Hydrocodone to active metabolite, but there is insufficient evidence to determine if these effects on pharmacokinetics translate into decreased analgesia or adverse effects.							
IreatG☆ ReviewG☆		CYP2D6 allel If no responsion consider an optional reco specific dosin	es do not indicate cose to Hydrocodone a opioid other than tra- ommendation). Refe ng recommendation	hanges from recon and opioid use is v amadol or codeine er to TreatGx for al s.	mmended dose. varranted, (per CPIC ternatives and				
Ibuprofen	Phenotype		Genetic Test	Results	Source/Evidence				
Advil Caldolor	Intermediate meta 1.0)	abolizer (AS	CYP2C9 (Star All	eles) *1/*3	CPIC A ³³ ; FDA 3 ³⁴				
Duexis Motrin IB NeoProfen	Implication:	CYP2C9 inte reduced met	rmediate metabolize abolism of Ibuprofe	er with an activity In to less active co	score of 1.0: mpounds				
6 ₁ 9 TreatCre		Higher plasn of adverse d	na concentrations o rug reactions	f active drug may	increase the risk				
ReviewGx	2	Initiate thera	apy with the lowest	recommended dos	se of Ibuprofen				
Iloperidone	Phenotype		Genetic Test	Results	Source/Evidence				
Fanapt	Poor metabolizer		CYP2D6	*4/*4	FDA 1 ³⁴				
₽ TreatGx ReviewGx	Implication: 🛕	FDA PGx Tab Recommend higher adver 50%.	le Section 1 – CYP2 ations: Results in hi se reaction risk (QT	D6 Therapeutic M gher systemic con prolongation). Re	anagement centrations and educe dosage by				



SPECIMEN DETAILS BARCODE: TST-DL-SAMPLE SAMPLE ID: 00001 TYPE: DBS COLLECTED: 13/Aug/2024

Imipramine	Phenotype		Genetic Test	Results	Source/Evidence			
Tofranil	Poor metabolizer		CYP2D6	*4/*4	CPIC B ¹⁶ ; FDA 3 ³⁴			
TreatGx	Normal metaboliz	er	CYP2C19	*1/*1	CPIC B ¹⁶			
ReviewG _X	Implication:	ication: CYP2D6 poor metabolizer: greatly reduced metabolism of Imipramine to less active compounds Higher plasma concentrations of active drug may increase the risk of adverse drug reactions						
		Avoid Imipra recommend Refer to Tre recommend	amine use. If use is war ed starting dose (per Cf atGx for alternatives an ations.	ranted, consid PIC optional ro d specific dos	der a reduction of ecommendation). ing			
Lansoprazole	Phenotype		Genetic Test	Results	Source/Evidence			
Prevacid	Normal metaboliz	er	CYP2C19	*1/*1	CPIC A ²⁰ ; FDA 3 ³⁴			
₽ TreatG≭	Implication:	CPIC – Impl risk of thera	ication: Normal PPI met peutic failure compared	abolism; may with CYP2C1	y be at increased 9 IMs and PMs.			
ReviewG _%	2	CPIC – Mode dose. Consid Helicobacter may be give	erate Recommendation: der increasing dose by 5 pylori infection and ero n in divided doses. Mon	Initiate stand 50–100% for t osive esophag itor for efficad	dard starting daily the treatment of itis. Daily dose cy.			
Lofexidine	Phenotype		Genetic Test	Results	Source/Evidence			
Lucemyra	Poor metabolizer		CYP2D6	*4/*4	FDA 1 ³⁴			
6 ₁₁ 3	Implication:	CYP2D6 poo Lofexidine to	r metabolizer: greatly r b less active compounds	educed metal	bolism of			
ReviewG _%		Higher plasr of orthostat	na concentrations of act	tive drug may ycardia	increase the risk			
	2	This drug ha monograph	as an FDA therapeutic re or FDA labelling for dos	ecommendation ing recommen	on, refer to drug ndations			
Lovastatin	Phenotype		Genetic Test	Results	Source/Evidence			
Altoprev	Normal function		SLCO1B1	*1/*1	CPIC A ⁷			
€ ₁ €	Implication:	CPIC – Impl exposure.	ication: Typical myopatl	ny risk and Lo	ovastatin			
TreatGx ReviewGx		CPIC – Stro and adjust o The potentia renal and he to initiating	ng Recommendation: Pr loses based on disease- al for drug-drug interact epatic function and ance a statin.	escribe desire specific guide ions and dose stry should b	ed starting dose elines. e limits based on e evaluated prior			
Lusutrombopag	Phenotype		Genetic Test	Results	Source/Evidence			
Mupleta ReviewG*	Normal Factor II		Factor II rs1799963	G/G	Product monograph (actionable) ³¹			
	Normal Factor V L	eiden	Factor V rs6025	C/C	Product monograph (actionable) ³¹			
	Implication:	Product mor (i.e. Prothro	nograph: no change in r mbin 20210A mutation	isk stated for absent).	normal Factor II			
		Product mor	nograph: no change in r	isk stated for	normal Factor V.			
Mavacamten	Phenotype		Genetic Test	Results	Source/Evidence			
Camzyos	Normal metaboliz	er	CYP2C19	*1/*1	FDA 2 ³⁴			
ReviewG %	Implication:	FDA PGx Tal	ole: no information for t	his phenotype	e.			



SPECIMEN DETAILS BARCODE: TST-DL-SAMPLE SAMPLE ID: 00001 TYPE: DBS COLLECTED: 13/Aug/2024 ORDERED BY Nordic Laboratories REPORT GENERATED: 13/Aug/2024

Meclizine	Phenotype		Genetic Test	Results	Source/Evidence				
Antivert	Poor metabolizer		CYP2D6	*4/*4	FDA 1 ³⁴				
ReviewG _%	Implication:	CYP2D6 poo Meclizine to	r metabolizer: great less active compoun	y reduced metab ds	olism of				
		Higher plasma concentrations of active drug may increase the risk of adverse drug reactions							
	2	This drug ha monograph	is an FDA therapeuti or FDA labelling for o	c recommendatio losing recommen	n, refer to drug dations				
Meloxicam	Phenotype		Genetic Test	Results	Source/Evidence				
Anjeso Mobic	Intermediate met 1.0)	abolizer (AS	CYP2C9 (Star Alle	eles) *1/*3	CPIC A ³³ ; FDA 1 ³⁴				
Qmiiz ODT Vivlodex	Implication:	CYP2C9 intermediate metabolizer with an activity score of 1.0: reduced metabolism of Meloxicam to less active compounds							
TreatGx		Higher plasr of adverse d	na concentrations of rug reactions	active drug may	increase the risk				
ReviewGx	2	Consider a 5	0% reduction of the	recommended d	ose				
		Dose titratio (7 days afte	n should not occur u r first dose)	ntil after steady	state is reached				
Methotrexate	Phenotype		Genetic Test	Results	Source/Evidence				
Metoject Otrexup Rasuvo	Increased risk of compared to G/G compared to A/A	toxicity or decreased	MTHFR rs180113	3 G/A	PharmGKB 2A				
Trexall Xatmep ¶ P TreatG ReviewG	Implication: 🛕	 r): Patients with or arthritis who ased risk of hotype, or may ared to patients ence has been lso influence been assigned a hined to be not 							
Methylphenidate	Phenotype		Genetic Test	Results	Source/Evidence				
Aptensio Concerta	No significant ass response	ociation to	COMT rs4680	G/A	PharmGKB 4				
Cotempla Daytrana Jornay Metadate Methylin Quillichew Quillivant Relexxiii	Implication:	PharmGKB - evidence ba between the methylpheni reported. Th recommenda clinically act influence res	- Clinical Annotation se suggests that the cOMT rs4680 A/G g date. However, confl is drug-variant pair ation" by DPWG, as i ionable. Other genet sponse to methylphe	(Level 4 Efficacy) re is no significan lenotype and respicting evidence h has been assigne t was determined ic and clinical fac nidate.	: The current t association ponse to as been d a "no I to be not tors may also				

TreatG_×

Ritalin

ReviewG_×



SPECIMEN DETAILS BARCODE: TST-DL-SAMPLE SAMPLE ID: 00001 TYPE: DBS COLLECTED: 13/Aug/2024

Metoclopramide	Phenotype	Genetic Test	Results	Source/Evidence			
Metonia Reglan € _l €	Poor metabolizer	CYP2D6	*4/*4	FDA 1 ³⁴			
	Implication:	CYP2D6 poor metabolizer: grea Metoclopramide to less active c	tly reduced metab ompounds	olism of			
₽ TreatG×		Higher plasma concentrations o of adverse drug reactions	Higher plasma concentrations of active drug may increase the risk of adverse drug reactions				
ReviewG %	2	Consider a reduction of the recommended dose					
	2	This drug has an FDA therapeutic recommendation, refer to drug monograph or FDA labelling for dosing recommendations					

Metoprolol	Phenotype	Genetic Test	Results	Source/Evidence
Kapspargo Sprinkle Lopressor Toprol-XL TreatG% ReviewG%	Poor metabolizer	CYP2D6	*4/*4	DPWG ¹⁰ ; FDA 3 ³⁴
	Implication:	CYP2D6 poor metabolizer: grea Metoprolol to less active compo	tly reduced metab unds	polism of
		Higher plasma concentrations o of adverse drug reactions	f active drug may	increase the risk
	3	If a gradual reduction in heart r clinically significant bradycardia and/or prescribe no more than	in the event of e in small steps ard dose.	

Mirabegron	Phenotype	Genetic Test	Results	Source/Evidence			
Myrbetriq	Poor metabolizer	CYP2D6	*4/*4	FDA 3 ³⁴			
€ ₁ €	Implication:	CYP2D6 poor metabolizer: reduced metabolism of Mirabegron leads to higher plasma concentrations					
TreatG☆ ReviewG☆		There is a potential impact on impact of CYP2D6 variants on been established	pharmacokinetic pr the safety of Mirabe	operties. The egron has not			

Morphine	Phenotype		Genetic Test	Results	Source/Evidence			
Kadian	Increased analge	Increased analgesic response OPRM1 rs1799971 A/A PharmGKB 3						
M-Eslon Morphabond ER MS Contin MS-IR Statex (1) (P) TreatG% ReviewG%	Implication: 🥻	PharmGKB - the OPRM1 analgesic re A/G or G/G reported. Th recommend clinically act affect respo PharmGKB - the OPRM1 morphine dc or G/G geno reported. Th recommend clinically act affect morpl	- Clinical Annotation (L rs1799971 A/A genotyp sponse to morphine as genotypes. However, co his drug-variant pair ha ation" by CPIC, as it wa cionable. Other genetic nse to morphine. - Clinical Annotation (L rs1799971 A/A genotyp ose requirements as co bypes. However, conflic his drug-variant pair ha ation" by CPIC, as it wa cionable. Other genetic hine dose requirements	evel 3 Efficacy) be may have ar compared to p onflicting evide s been assigne is determined to or clinical facto evel 3 Dosage) be may have de mpared to patient ting evidence la s been assigne is determined to or clinical facto	 Patients with increased atients with the nce has been d a "no to be not rs may also Patients with ecreased ents with the A/G has been d a "no to be not rs may also 			
Nateglinide	Phenotyne		Genetic Test	Results	Source/Evidence			

Nateglinide	Phenotype		Genetic lest	Results	Source/Evidence	
ReviewG🛪	Intermediate me	tabolizer	CYP2C9	*1/*3	FDA 1 ³⁴	
	Implication:		able: no information	for this phonotype		



SPECIMEN DETAILS BARCODE: TST-DL-SAMPLE SAMPLE ID: 00001 TYPE: DBS COLLECTED: 13/Aug/2024 ORDERED BY Nordic Laboratories REPORT GENERATED: 13/Aug/2024

Nebivolol	Phenotype		Genetic Test	Results	Source/Evidence
Bystolic	Poor metabolizer		CYP2D6	*4/*4	FDA 3 ³⁴
G _{II} B OF	Implication:	CYP2D6 poor to higher plas	metabolizer: reductions	ced metabolism of	Nebivolol leads
► TreatGx ReviewGx		There is a po impact of CYI established	tential impact on p 2D6 variants on th	harmacokinetic pro ne safety of Nebivo	operties. The blol has not been
Nicotine replacement therapy	Phenotype		Genetic Test	Results	Source/Evidence
Nicorette Nicotrol	Increased likelihoo cessation compare	od of smoking ed to G/G	ANKK1/DRD2 rs1800497	A/G	PharmGKB 3
Habitrol Nicoderm Thrive TreatGx ReviewGx	Implication:	PharmGKB – the ANKK1 rs likelihood of s replacement genotype. Ho Other genetic likelihood of s	Clinical Annotation 1800497 A/G gencess smoking cessation therapy as compar- wever, contradictor and clinical factor smoking cessation.	(Level 3 Efficacy) otype may have an when treated with ed to patients with ry findings have be s may influence a	: Patients with increased nicotine o the G/G een reported. patient's
Nortriptyline	Phenotype		Genetic Test	Results	Source/Evidence
Aventyl	Poor metabolizer		CYP2D6	*4/*4	CPIC A ¹⁶ ; FDA 3 ³⁴
ReviewG%	A	Nortriptyline Higher plasm of adverse dr Avoid Nortrip Consider alte warranted, co CPIC strong r and specific o	to less active comp a concentrations of ug reactions tyline use due to por rnative drug not m posider a reduction recommendation). I losing recommenda	oounds factive drug may i otential for advers etabolized by CYP2 of the recommend Refer to TreatGx fo ations.	increase the risk e effects. 2D6. If use is ded dose (per or alternatives
Oliceridine	Phenotype		Genetic Test	Results	Source/Evidence
Olinvyk	Poor metabolizer		CYP2D6	*4/*4	FDA 1 ³⁴
₽ ReviewG%	Implication: 🛕	FDA PGx Tabl Recommenda higher advers May require l	e Section 1 – Thera tions: Results in hi se reaction risk (res ess frequent dosing	apeutic Manageme gher systemic con spiratory depressic g.	ent centrations and on and sedation).
Omeprazole	Phenotype		Genetic Test	Results	Source/Evidence
Losec	Normal metabolize	er	CYP2C19	*1/*1	CPIC A ²⁰ ; FDA 3 ³⁴
Olex Prilosec	Implication:	CPIC – Implie risk of therap	ation: Normal PPI eutic failure compa	metabolism; may ared with CYP2C19	be at increased IMs and PMs.
► TreatGx ReviewGx	2	CPIC – Moder dose. Conside Helicobacter may be giver	ate Recommendati er increasing dose pylori infection and in divided doses.	ion: Initiate standa by 50–100% for th erosive esophagit Monitor for efficacy	ard starting daily ne treatment of cis. Daily dose y.
Ondansetron	Phenotype		Genetic Test	Results	Source/Evidence
Zofran	Poor metabolizer		CYP2D6	*4/*4	CPIC A ³
Zuplenz	Implication				

Implication: CYP2D6 alleles do not indicate changes from recommended dose

ReviewG%



SPECIMEN DETAILS BARCODE: TST-DL-SAMPLE SAMPLE ID: 00001 TYPE: DBS COLLECTED: 13/Aug/2024

Oral contraceptives	Phenotype		Genetic Test	Results	Source/Evidence		
e	Decreased risk fo	r DVT	Factor II rs1799963	G/G	PharmGKB 2B		
ReviewGx	Decreased risk of (normal Factor V)	thrombosis	Factor V rs6025	C/C	PharmGKB 2B		
	Implication:	PharmGKB - the Factor II contraceptiv thrombosis (genotypes o However, co and clinical f taking oral c	Clinical Annotation (Le rs1799963 G/G genoty es may have a decrease DVT), as compared to p r those who are not tak nflicting evidence has b actors may also influen ontraceptives.	vel 2B Toxicity ope who are ta ed risk for dee patients with t ing oral contra een reported. ce risk for DV	y): Patients with aking oral p vein the A/A or A/G aceptives. Other genetic T in patients		
		PharmGKB – Clinical Annotation (Level 2B Toxicity): Patients with the rs6025 C/C genotype (normal Factor V) may have a decreased risk of experiencing thrombosis when receiving oral contraceptives as compared to patients with the C/T or T/T genotype (carriers of Factor V Leiden). However, conflicting evidence has been reported. Both Factor V Leiden and oral contraceptives have been found to independently increase the risk for thrombosis, but together they may have a cumulative effect on thrombosis risk. Other genetic and clinical factors may also influence risk of thrombosis.					
Pantoprazole	Phenotype		Genetic Test	Results	Source/Evidence		
Pantoloc Protonix Tecta TreatGx ReviewGx	Normal metaboliz	er CPIC – Impl risk of thera CPIC – Mode dose. Consic Helicobacter may be give	CYP2C19 cation: Normal PPI met peutic failure compared trate Recommendation: ler increasing dose by 5 pylori infection and erconn in divided doses. Mon	*1/*1 abolism; may with CYP2C19 Initiate stand 60-100% for t osive esophagi itor for efficac	CPIC A ²⁰ ; FDA 1 ³⁴ be at increased 9 IMs and PMs. lard starting daily he treatment of tis. Daily dose cy.		
Paroxetine	Phenotype		Genetic Test	Results	Source/Evidence		
Brisdelle	Poor metabolizer		CYP2D6	*4/*4	CPIC A ⁵ ; FDA 3 ³⁴		
Paxil Pexeva	Implication:	Greatly reduced metabolism when compared with CYP2D6 normal metabolizers. Higher plasma concentrations may increase the probability of side effects. The impact of paroxetine-associated autoinhibition of CYP2D6 is minimal in poor metabolizers.					
TreatGx ReviewGx		Consider a 50% reduction in recommended starting dose, slower titration schedule, and a 50% lower maintenance dose as compared with normal metabolizers (per CPIC moderate recommendation).					
Perphenazine	Phenotype		Genetic Test	Results	Source/Evidence		
P [*]	Poor metabolizer		CYP2D6	*4/*4	FDA 2 ³⁴		
TreatG x ReviewG x	Implication: 🛕	FDA PGx Tab Response: R adverse read	le Section 2 – CYP2D6 esults in higher system tion risk.	Potential Impa ic concentratio	act on Safety or ons and higher		



SPECIMEN DETAILS BARCODE: TST-DL-SAMPLE SAMPLE ID: 00001 TYPE: DBS COLLECTED: 13/Aug/2024

Phenytoin	Phenotype	Genetic ⁻	Test Results	Source/Evidence				
Dilantin	Intermediate meta	bolizer CYP2C9	*1/*3	CPIC A ¹⁸ ; FDA 1 ³⁴				
henytoin ilantin remytoine henytek imozide reatGx ReviewGx iroxicam eldene TreatGx ReviewGx itavastatin ivalo ypitamag ireatGx ReviewGx reatGx ReviewGx itavastatin ivalo ypitamag iffer all all all all all all all all all al	Implication:	CYP2C9 intermediate m reduced metabolism of	etabolizer with an active Phenytoin to less active	rity score of 1.0: e compounds				
•∦•		Higher plasma concentr adverse reactions	ations may increase th	e risk of cutaneous				
ReviewG %	A	For first dose, use typication for subsequent doses	al initial dose. Consider	a 25% reduction				
Pimozide	Phenotype	Genetic ⁻	Test Results	Source/Evidence				
Orap	Poor metabolizer	CYP2D6	*4/*4	FDA 1 ³⁴				
TreatG☆ ReviewG☆	Implication: 🛕	FDA PGx Table Section : Recommendations: Res Dosages should not exc adults who are poor me increased earlier than 1	 CYP2D6 Therapeuti ults in higher systemic eed 0.05 mg/kg in child tabolizers and dosages 4 days. 	c Management concentrations. dren or 4 mg/day in should not be				
Piroxicam	Phenotype	Genetic ⁻	Test Results	Source/Evidence				
Feldene TreatGx	Intermediate meta 1.0)	Intermediate metabolizer (AS CYP2C9 (Star Alleles) *1/*3 CPIC A ³³ ; FDA 1 ³⁴ 1.0)						
ReviewG %	Implication:	CYP2C9 intermediate metabolizer with an activity score of 1.0: reduced metabolism of Piroxicam to less active compounds						
		Higher plasma concentrations of active drug may increase the risk of adverse drug reactions						
		Consider an alternative CYP2C9	drug not predominantl	y metabolized by				
Pitavastatin	Phenotype	Genetic ⁻	Test Results	Source/Evidence				
Livalo	Normal function	SLCO1B1	*1/*1	CPIC A ⁷				
Zypitamag € _l €	Implication:	CPIC – Implication: Typ exposure.	ical myopathy risk and	Pitavastatin				
₽ TreatG% ReviewG%		CPIC – Strong Recommon and adjust doses based The potential for drug-d renal and hepatic function to initiating a statin.	xposure. PIC – Strong Recommendation: Prescribe desired starting dose nd adjust doses based on disease-specific guidelines. ne potential for drug-drug interactions and dose limits based on enal and hepatic function and ancestry should be evaluated prior o initiating a statin.					
Pitolisant	Phenotype	Genetic ⁻	Test Results	Source/Evidence				
Wakix G _{li} ð	Poor metabolizer	CYP2D6	*4/*4	FDA 1 ³⁴ ; Product monograph (actionable) ¹⁵				
₽ ReviewG≭	Implication: 🛕	FDA PGx Table Section : Recommendations: Res Use lowest recommende for specific dosing recor	L – Therapeutic Manage ults in higher systemic ed starting dosage. Ref nmendations.	ement concentrations. er to FDA labeling				
	2	FDA Product Monograph metabolizers, initiate pil a maximum dose of 17.	: In patients known to colisant at 8.9 mg once 8 mg once daily after 7	be poor CYP2D6 daily and titrate to days.				



SPECIMEN DETAILS BARCODE: TST-DL-SAMPLE SAMPLE ID: 00001 TYPE: DBS COLLECTED: 13/Aug/2024

Pravastatin	Phenotype	Genetic	Test Result	s Sour	rce/Evidence		
Pravachol	Normal function	SLCO1B:	L *1/*1	CPIC	C A ⁷		
G _l a Dr	Implication:	CPIC – Implication: Typ exposure.	ical myopathy risk a	and Pravastatin			
rreatG≍ ReviewG≍		CPIC – Strong Recomm and adjust doses based The potential for drug-c renal and hepatic functi to initiating a statin.	endation: Prescribe on disease-specific rug interactions an on and ancestry sh	desired starting d guidelines. d dose limits base ould be evaluated	ose d on prior		
Propafenone	Phenotype	Genetic	Test Result	s Sour	rce/Evidence		
Rythmol	Poor metabolizer	CYP2D6	*4/*4	DPW	/G ¹⁰ ; FDA 1 ³⁴		
TreatG☆ ReviewG☆	Implication:	CYP2D6 poor metaboliz Propafenone to less act	er: greatly reduced ve compounds	metabolism of			
		Higher plasma concentr of adverse drug reaction	ations of active dru ns	g may increase the	e risk		
	4	Reduce the standard do monitor plasma concent	se by 70%, record tration	electrocardiogram	, and		
Propranolol	Phenotype	Genetic	Test Result	s Sour	rce/Evidence		
Inderal	Poor metabolizer	CYP2D6	*4/*4	FDA	3 ³⁴		
Innopran TreatGx	Implication:	CYP2D6 poor metaboliz leads to higher plasma	er: reduced metabo concentrations	olism of Propranolo	ı		
KeviewG%		There is a potential impact on pharmacokinetic properties. The impact of CYP2D6 variants on the safety of Propranolol has not been established					
Protriptyline	Phenotype	Genetic	Test Result	s Sour	rce/Evidence		
Vivactil	Poor metabolizer	CYP2D6	*4/*4	FDA	3 ³⁴		
ReviewG≍	Implication:	CYP2D6 poor metabolizer: reduced metabolism of Protriptyline to less active compounds leads to higher plasma concentrations of active drug					
		There is a potential imp impact of CYP2D6 varia been established	ne not				
Quetiapine	Phenotype	Genetic	Test Result	s Sour	ce/Evidence		
Seroquel	Normal metaboliz	er CYP3A4	*1/*1	DPW	/G ¹⁰		
••	Implication:	DPWG: no recommenda	tion for this CYP3A	4 phenotype.			
TreatG☆ ReviewG☆							
Rabeprazole	Phenotype	Genetic	Test Result	s Sour	rce/Evidence		
Aciphex	Normal metaboliz	er CYP2C19	*1/*1	FDA	3 ³⁴		
Pariet	Implication:	FDA PGx Table: no infor	mation for this phe	notype.			
TreatGx ReviewGx							



SPECIMEN DETAILS BARCODE: TST-DL-SAMPLE SAMPLE ID: 00001 TYPE: DBS COLLECTED: 13/Aug/2024

Risperidone	Phenotype		Genetic Test	Results	Source/Evidence				
Perseris	Poor metabolizer		CYP2D6	*4/*4	DPWG ¹⁰ ; FDA 3 ³⁴				
Risperdal ເ	Increased prolactir G/G	compared to	ANKK1/DRD2 rs1800497	A/G	PharmGKB 3				
₽• TreatG% ReviewG%	Implication: 🛕	DWPG – CYP2 therapy failure increases the metabolite an ratio, which is DWPG – CYP2 If problematic system occur further to 50%	D6 Description: The e increased from 1 plasma concentrat d increases the pro- more effective at D6 Recommendati side effects origin despite this reduce 6 of the normal do	the percentage of p 6% to 26%. The <u>c</u> ion of risperidone oportion of risperid crossing the blood on: Use 67% of the ating in the centra ed dose, then redu- se.	atients with gene variation plus the active done in this d-brain barrier. ne normal dose. al nervous uce the dose				
		FDA PGx Table Section 3 – CYP2D6 Potential Impact on Pharmacokinetic Properties Only: Alters systemic parent drug and metabolite concentrations.							
	A	PharmGKB – (the ANKK1/DF have increase compared to p clinical factors hyperprolactin	Clinical Annotation RD2 rs1800497 A/d d prolactin when to patients with the G s may also influence nemia.	(Level 3 Toxicity) G genotype and so reated with risperi /G genotype. Othe e risperidone relat	: Patients with hizophrenia may done as er genetic and ted				
Rosuvastatin	Phenotype		Genetic Test	Results	Source/Evidence				
Crestor	Normal function		SLCO1B1	*1/*1	CPIC A ⁷ : FDA 3 ³⁴				
_{ୁମ} ର ଅନ	Implication:	CPIC – SLCO1 Rosuvastatin	B1 Implication: Ty exposure.	pical myopathy ris	sk and				
TreatG☆ ReviewG☆		CPIC – Strong and adjust do population-sp The potential renal and hep to initiating a	Recommendation ses of rosuvastatin ecific guidelines. for drug-drug inter atic function and a statin.	: Prescribe desired based on disease actions and dose ncestry should be	d starting dose e-specific and limits based on evaluated prior				
Sertraline	Phenotype		Genetic Test	Results	Source/Evidence				
Zoloft	Normal metabolize	r	CYP2B6	*1/*1	CPIC B ⁵				
P *	Normal metabolize	r	CYP2C19	*1/*1	CPIC A ⁵				
TreatG🛪	Implication:	Normal CYP2E	36 metabolism						
ReviewG %		Normal CYP20	C19 metabolism						
		Initiate therap recommendat	by with recommend ion).	led starting dose ((per CPIC strong				
Simvastatin	Phenotype		Genetic Test	Results	Source/Evidence				
Zocor	Normal function		SLCO1B1	*1/*1	CPIC A ⁷ ; FDA 2 ³⁴				
Flolipid	Implication:	CPIC – Implic exposure.	ation: Typical myo	oathy risk and Sim	nvastatin				
GIÐ									



SPECIMEN DETAILS BARCODE: TST-DL-SAMPLE SAMPLE ID: 00001 TYPE: DBS COLLECTED: 13/Aug/2024 ORDERED BY Nordic Laboratories REPORT GENERATED: 13/Aug/2024

Siponimod	Phenotype		Genetic Test	Results	Source/Evidence		
Mayzent	Intermediate me	Intermediate metabolizer		les) *1/*3	FDA 1 ³⁴		
କµ∎ ReviewG%	Implication: Reduced		etabolism of Siponimod to less active compounds				
		Higher plasn of adverse d	na concentrations of active drug may increase the risk rug reactions				
	🛕 Consider a ree		eduction of the recommended dose				

This drug has an FDA therapeutic recommendation, refer to drug monograph or FDA labelling for dosing recommendations

Tacrolimus	Phenotype		Genetic Test	Results	Source/Evidence		
Advagraf Astagraf XL Envarsus XR Prograf Protopic ReviewG %	Poor metabolizer		CYP3A5	*3/*3	CPIC A ⁴ ; FDA 1 ³⁴		
	Normal metaboliz	er	CYP3A4	*1/*1	PharmGKB 2A		
	Implication:	CPIC – CYP3A5 Implication: Higher ("normal") dose-adjusted trough concentrations of tacrolimus and increased chance of achieving target tacrolimus concentrations. CPIC – CYP3A5 Strong Recommendation: Initiate therapy with standard recommended dose. Use therapeutic drug monitoring to guide dose adjustments. This recommendation includes the use of tacrolimus in kidney, heart, lung, and hematopoietic stem cell transplant patients, and liver transplant patients in which the donor and recipient genotypes are identical.					
		PharmGKB – Patients who copies of the tacrolimus as *22 alleles or copy of the * may also influ	CYP3A4 Clinical Annot are recipients of an or CYP3A4*1 allele may compared to patients one copy of the 1* a 3 or *22 alleles. Othe jence tacrolimus dose	ation (Level 2A Dos rgan transplant and require an increased with two copies of the llele in combination r genetic and clinical	age): carry two d dose of the *3 or with one factors		

Tamoxifen	Phenotype	Genetic Test	Results	Source/Evidence			
Nolvadex Soltamox	Poor metabolize	CYP2D6 (Activi Score)	ty *4/*4	CPIC A ¹³ ; FDA 3 ³⁴			
ReviewG _%	Implication:	CYP2D6 poor metabolizer: gre Tamoxifen to endoxifen	metabolizer: greatly reduced metabolism of endoxifen				
		Strong CPIC recommendation for breast cancer therapy: Alternative hormonal therapy recommended.					
		Higher dose tamoxifen (40 mg normalize endoxifen concentra are contraindications to aroma	Higher dose tamoxifen (40 mg/day) increases but does not normalize endoxifen concentrations and can be considered if there are contraindications to aromatase inhibitor therapy.				
		Recommendation for conditions other than breast cancer: There is a potential impact on pharmacokinetic properties. The impact of CYP2D6 variants on the safety of Tamoxifen has not been established (FDA PGx Table)					
Tamsulosin	Phenotype	Genetic Test	Results	Source/Evidence			

			needite	0000,211001100				
Flomax ReviewGx	Poor metabolizer	CYP2D6	*4/*4	FDA 3 ³⁴				
	Implication:	CYP2D6 poor metabolizer: reduced metabolism of Tamsulosin to less active compounds leads to higher plasma concentrations of active drug						
		There is a potential impact on p impact of CYP2D6 variants on t been established	harmacokinetic pl he safety of Tams	operties. The Josin has not				



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Tenoxicam	Phenotype		Genetic Test	Results	Source/Evidence		
Mobiflex €jð ₽ ReviewG%	Intermediate me 1.0)	etabolizer (AS	CYP2C9 (Star All	eles) *1/*3	CPIC A ³³		
	Implication:	CYP2C9 inter reduced met	rmediate metabolizer with an activity score of 1.0: abolism of Tenoxicam to less active compounds				
		Higher plasm of adverse di	na concentrations of rug reactions	factive drug may	increase the risk		
		Consider an CYP2C9	alternative drug not predominantly metabolized by				

Tetrabenazine	Phenotype	Genetic Test	Results	Source/Evidence		
Austedo	Poor metabolizer	CYP2D6	*4/*4	FDA 1 ³⁴		
Nitoman Xenazine P ReviewG:	Implication:	CYP2D6 poor metabolizer: grea Tetrabenazine to less active co	olism of			
		Higher plasma concentrations of active drug may increase the risk of adverse drug reactions				
	2	Consider a reduction of maxim	onsider a reduction of maximum daily dose			

This drug has an FDA therapeutic recommendation, refer to drug monograph or FDA labelling for dosing recommendations

Thioridazine	Phenotype	Genetic Test	Results	Source/Evidence	
TreatGx	Poor metabolizer	CYP2D6	*4/*4	FDA 1 ³⁴	
ReviewG%	Implication: 🛕 FDA Rec high base poo	PGx Table Section 1 – CYP2 ommendations: Results in h ler adverse reaction risk (QT ed on experience with CYP2 r metabolizers.	2D6 Therapeutic Ma igher systemic con F prolongation). Pr D6 inhibitors. Cont	anagement centrations and edicted effect raindicated in	
Tolterodine	Phenotype	Genetic Test	Results	Source/Evidence	

loiteroume	Пепосуре	Genetic Test	Results	Source/Evidence	
Detrol	Poor metabolizer	CYP2D6	*4/*4	FDA 2 ³⁴	
6 ₁ 3 P^	Implication:	CYP2D6 poor metabolizer: gre Tolterodine	atly reduced metab	oolism of	
TreatG _%		Higher plasma concentrations prolongation	may increase the r	isk of QT	
ILEVIEWO&	2	Data indicate a potential impa	ct on patient safety		

Tramadol	Phenotype	Genetic Test	Results	Source/Evidence	
Conzip Durela	Poor metabolizer	CYP2D6	*4/*4	CPIC A ⁸ ; FDA 1 ³⁴ ; FDA 2 ³⁴	
Ralivia Ultram Zvtram XI	Implication:	CYP2D6 poor metabolizer: greatly reduced metabolism of Tramadol to active metabolite may result in diminished analgesia			
 Gradient Gold Strength Gradient Gold Streng	3	Avoid Tramadol use due to poss opioid use is warranted, conside codeine (per CPIC strong recom alternatives and specific dosing	ibility of diminishe er an opioid other imendation). Refe recommendations	ed analgesia. If than tramadol or r to TreatGx for 5.	



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Trimipramine	Phenotype	Genetic Test	Results	Source/Evidence		
Surmontil	Poor metabolizer	CYP2D6	*4/*4	CPIC B ¹⁶ ; FDA 3 ³⁴		
ReviewG🛪	Normal metabolizer	CYP2C19	*1/*1	CPIC B ¹⁶		
	Implication:	CYP2D6 poor metabolizer: greatly reduced metabolism of Trimipramine to less active compounds Higher plasma concentrations of active drug may increase the risk of adverse drug reactions				
		of recommended starting dose recommendation). Refer to Trea dosing recommendations.	(per CPIC optional atGx for alternative	es and specific		
Valbenazine	Phenotype	Genetic Test	Results	Source/Evidence		
Ingrezza	Poor metabolizer	CYP2D6	*4/*4	FDA 1 ³⁴		
₽ ReviewG‰	Implication:	CYP2D6 poor metabolizer: grea /albenazine to less active comp	tly reduced metab bounds	olism of		
	l	Higher plasma concentrations of active drug may increase the risk of QT prolongation				
	2	Consider a reduction of the recommended dose				
		This drug has an FDA therapeutic recommendation, refer to drug monograph or FDA labelling for dosing recommendations				
Venlafaxine	Phenotype	Genetic Test	Results	Source/Evidence		
Effexor XR	Poor metabolizer	CYP2D6	*4/*4	CPIC B ⁵ ; FDA 1 ³⁴		
۹₁● ₽► TreatGჯ ReviewGჯ	Implication:	Decreased metabolism of venlafaxine to the active metabolite O- desmethylvenlafaxine (desvenlafaxine) and greatly decreased O- desmethylvenlafaxine: venlafaxine ratio as compared with CYP2D6 normal and intermediate metabolizers. The clinical impact of increased venlafaxine and decreased O-desmethylvenlafaxine: venlafaxine ratio in CYP2D6 poor metabolizers is unclear, but CYP2D6 PM genotype has been associated with adverse effects.				
		Consider a clinically appropriate predominantly metabolized by recommendation).	e alternative antide CYP2D6 (per CPIC	epressant not optional		
Viloxazine	Phenotype	Genetic Test	Results	Source/Evidence		
Qelbree	Poor metabolizer	CYP2D6	*4/*4	FDA 3 ³⁴		
ଣ୍ଣ ReviewG≭	Implication:	DA PGx Table Section 3 – Pote Properties Only: May result in h	ential Impact on Ph nigher systemic cor	armacokinetic ncentrations.		
Voriconazole	Phenotype	Genetic Test	Results	Source/Evidence		
Vfend	Normal metabolizer	CYP2C19	*1/*1	CPIC A ²⁴ ; FDA 2 ³⁴		
ຣັມອ	Implication:	CYP2C19 alleles do not indicate	e changes from reco	ommended dose		

ReviewG_×



dose.

SPECIMEN DETAILS BARCODE: TST-DL-SAMPLE SAMPLE ID: 00001 TYPE: DBS COLLECTED: 13/Aug/2024 ORDERED BY Nordic Laboratories REPORT GENERATED: 13/Aug/2024

Vortioxetine	Phenotype	Genetic Test	Results	Source/Evidence			
Trintellix	Poor metabolizer	CYP2D6	*4/*4	CPIC A ⁵ ; FDA 1 ³⁴			
TreatG☆ ReviewG☆	Implication: Gr wh cou	Greatly reduced metabolism of vortioxetine to inactive compounds when compared with CYP2D6 normal metabolizers. Higher plasma concentrations may increase the probability of side effects.					
	A Ini ma ap me	tiate 50% of starting dose (e aximum recommended dose o propriate alternative antidepr etabolized by CYP2D6 (per CF	.g., 5 mg) and titra of 10 mg or conside ressant not predom PIC moderate recon	ate to the er a clinically ninantly nmendation).			
Warfarin	Phenotype	Genetic Test	Results	Source/Evidence			
Coumadin	Intermediate metabol	izer CYP2C9	*1/*3	CPIC A ¹⁷ ; FDA 1 ³⁴			
Jantoven	Reduced response	VKORC1	G/G	CPIC A ¹⁷ ; FDA 1 ³⁴			
IreatGx ReviewGx	Implication: 🛕 Th clin	The algorithm in TreatGx includes pharmacogenetics and other clinical factors in calculating initial warfarin dose					
Zuclopenthixol	Phenotype	Genetic Test	Results	Source/Evidence			
Clopixol	Poor metabolizer	CYP2D6	*4/*4	DPWG ¹⁰			
TreatGx ReviewGx	Implication: 🛕 DV ele of ap DV	DWPG – CYP2D6 Description: The risk of side effects may be elevated. The genetic variation results in a decreased conversion of zuclopenthixol, which causes the plasma concentration to be approximately 1.6-fold higher. DWPG – CYP2D6 Recommendation: Use with 50% of the normal					

Genetic Test Results For **Sample Patient** Nordic Laboratories Oy Laboratory Director: Dr Juha Matilainen | ElimĤenkatu 15, 00510 Helsinki, Finland +358444918371 filabs@nordicgroup.eu

✓medcheck[™] from **dnalife**

PATIENT INFORMATION NAME: Sample Patient DOB: 01/Jan/1970 SEX AT BIRTH: Male

SPECIMEN DETAILS

BARCODE: TST-DL-SAMPLE SAMPLE ID: 00001 TYPE: DBS COLLECTED: 13/Aug/2024

ORDERED BY Nordic Laboratories REPORT GENERATED: 13/Aug/2024

Table of Available References

Drug	Genetic Test	Sources
Abrocitinib	CYP2C19	FDA ^{27,34}
Alfentanil	OPRM1 rs1799971	PharmGKB
Amitriptyline	CYP2D6	CPIC ¹⁶ ; FDA ³⁴
Amitriptyline	CYP2C19	CPIC ¹⁶
Amoxapine	CYP2D6	FDA ³⁴
Amphetamine	CYP2D6	FDA ³⁴
Aripiprazole	CYP2D6	DPWG ¹⁰ ; FDA ³⁴
Aripiprazole lauroxil	CYP2D6	FDA ³⁴
Atomoxetine	CYP2D6 (Activity Score)	CPIC ⁶ ; FDA ³⁴
Atorvastatin	SLCO1B1	CPIC ⁷ ; FDA ³⁴
Avatrombopag	CYP2C9	FDA ³⁴
Avatrombopag	Factor II rs1799963	FDA ¹
Avatrombopag	Factor V rs6025	FDA ¹
Brexpiprazole	CYP2D6	DPWG ¹⁰ ; FDA ³⁴
Brivaracetam	CYP2C19	FDA ³⁴
Bupropion	ANKK1/DRD2 rs1800497	PharmGKB
Carisoprodol	CYP2C19	FDA ³⁴
Carvedilol	CYP2D6	FDA ³⁴
Celecoxib	CYP2C9 (Star Alleles)	CPIC ³³ ; FDA ³⁴
Cevimeline	CYP2D6	FDA ³⁴
Citalopram	CYP2C19	CPIC ⁵ ; FDA ³⁴
Clobazam	CYP2C19	FDA ^{21,34} ; Product monograph (actionable) ²¹
Clomipramine	CYP2D6	CPIC ¹⁶ ; FDA ³⁴
Clomipramine	CYP2C19	CPIC ¹⁶
Clopidogrel	CYP2C19	CPIC ¹⁹ ; FDA ³⁴
Clozapine	CYP2D6	FDA ³⁴
Codeine	CYP2D6	CPIC ⁸ ; FDA ³⁴
Cyclosporine	СҮРЗА5	PharmGKB
Darifenacin	CYP2D6	FDA ³⁴
Desipramine	CYP2D6	CPIC ¹⁶ ; FDA ³⁴
Deutetrabenazine	CYP2D6	FDA ³⁴
Dexlansoprazole	CYP2C19	CPIC ²⁰ ; FDA ³⁴
Diazepam	CYP2C19	FDA ³⁴
Donepezil	CYP2D6	FDA ³⁴
Doxepin	CYP2D6	CPIC ¹⁶ ; FDA ³⁴
Doxepin	CYP2C19	CPIC ¹⁶ ; FDA ³⁴
Dronabinol	CYP2C9	FDA ³⁴
Efavirenz		CDIC9, DDWC10, FDA34
	CYP2B6	CPIC ^o ; DPWG ^o ; FDA ^o
Elagolix	CYP2B6 SLCO1B1	FDA ³⁴
Elagolix Eliglustat	CYP2B6 SLCO1B1 CYP2D6	FDA ³⁴ DPWG ¹⁰ ; FDA ³⁴
Elagolix Eliglustat Eltrombopag	CYP2B6 SLCO1B1 CYP2D6 Factor V rs6025	FDA ³⁴ DPWG ¹⁰ ; FDA ³⁴ FDA ²⁶
Elagolix Eliglustat Eltrombopag Erdafitinib	CYP2B6 SLCO1B1 CYP2D6 Factor V rs6025 CYP2C9 (Star Alleles)	FDA ³⁴ PDWG ¹⁰ ; FDA ³⁴ FDA ²⁶ FDA ³⁴



PATIENT INFORMATION

NAME: Sample Patient DOB: 01/Jan/1970 SEX AT BIRTH: Male SPECIMEN DETAILS BARCODE: TST-DL-SAMPLE SAMPLE ID: 00001 TYPE: DBS COLLECTED: 13/Aug/2024

Drug	Genetic Test	Sources
Esomeprazole	CYP2C19	FDA ³⁴
Fentanyl	OPRM1 rs1799971	PharmGKB
Fesoterodine	CYP2D6	FDA ³⁴
Flecainide	CYP2D6	DPWG ¹⁰
Flibanserin	CYP2C19	FDA ³⁴
Flurbiprofen	CYP2C9 (Star Alleles)	CPIC ³³ ; FDA ³⁴
Fluvastatin	CYP2C9	CPIC ⁷
Fluvastatin	SLCO1B1	CPIC ⁷
Fluvoxamine	CYP2D6	CPIC ⁵ ; FDA ³⁴
Fosphenytoin	CYP2C9	CPIC ¹⁸ ; FDA ³⁴
Galantamine	CYP2D6	FDA ³⁴
Gefitinib	CYP2D6	FDA ³⁴
Haloperidol	CYP2D6	DPWG ¹⁰
Hydrocodone	CYP2D6	CPIC ⁸
Ibuprofen	CYP2C9 (Star Alleles)	CPIC ³³ ; FDA ³⁴
Iloperidone	CYP2D6	FDA ³⁴
Imipramine	CYP2D6	CPIC ¹⁶ : FDA ³⁴
Imipramine	CYP2C19	CPIC ¹⁶
Lansoprazole	CYP2C19	$CPIC^{20}$, EDA ³⁴
Lofexidine	CYP2D6	EDA^{34}
Lovastatin	SLC01B1	CPIC ⁷
Lusutrombopag	Eactor II rs1799963	FDA ³¹
Lusutrombopag	Factor V rs6025	FDΔ ³¹
Mavacamten	CYP2C19	EDA ³⁴
Meclizine	CYP2D6	EDA ³⁴
Meloxicam	CYP2C9 (Star Alleles)	$CPIC^{33}$, EDA ³⁴
Methotrevate	MTHER rs1801133	PharmGKB
Methylphenidate	COMT rs4680	PharmGKB
Metoclopramide	CYP2D6	FDA ³⁴
Metoprolol	CYP2D6	DPWG ¹⁰ : FDA ³⁴
Mirabegron	CYP2D6	FDA ³⁴
Morphine	OPRM1 rs1799971	PharmGKB
Nateglinide	CYP2C9	FDA ³⁴
Nebivolol	CYP2D6	FDA ³⁴
Nicotine replacement therapy	ANKK1/DRD2 rs1800497	PharmGKB
Nortriptyline	CYP2D6	CPIC ¹⁶ ; FDA ³⁴
Oliceridine	CYP2D6	FDA ³⁴
Omeprazole	CYP2C19	CPIC ²⁰ ; FDA ³⁴
Ondansetron	CYP2D6	CPIC ³
Oral contraceptives	Factor II rs1799963	PharmGKB
Oral contraceptives	Factor V rs6025	PharmGKB
Pantoprazole	CYP2C19	CPIC ²⁰ ; FDA ³⁴
Paroxetine	CYP2D6	CPIC ⁵ ; FDA ³⁴
Perphenazine	CYP2D6	FDA ³⁴
Phenytoin	CYP2C9	CPIC ¹⁸ ; FDA ³⁴
Pimozide	CYP2D6	DPWG ¹⁰ ; FDA ³⁴
Piroxicam	CYP2C9 (Star Alleles)	CPIC ³³ ; FDA ³⁴
Pitavastatin	SLC01B1	CPIC ⁷



SPECIMEN DETAILS BARCODE: TST-DL-SAMPLE SAMPLE ID: 00001 TYPE: DBS COLLECTED: 13/Aug/2024 ORDERED BY

Nordic Laboratories REPORT GENERATED: 13/Aug/2024

Drug	Genetic Test	Sources
Pitolisant	CYP2D6	FDA ^{15,34}
Pravastatin	SLC01B1	CPIC ⁷
Propafenone	CYP2D6	DPWG ¹⁰ ; FDA ³⁴
Propranolol	CYP2D6	FDA ³⁴
Protriptyline	CYP2D6	FDA ³⁴
Quetiapine	CYP3A4	DPWG ¹⁰
Rabeprazole	CYP2C19	FDA ³⁴
Risperidone	CYP2D6	DPWG ¹⁰ ; FDA ³⁴
Risperidone	ANKK1/DRD2 rs1800497	PharmGKB
Rosuvastatin	SLC01B1	CPIC ⁷ ; FDA ³⁴
Sertraline	CYP2B6	CPIC ⁵
Sertraline	CYP2C19	CPIC ⁵
Simvastatin	SLC01B1	CPIC ⁷ ; FDA ³⁴
Siponimod	CYP2C9 (Star Alleles)	FDA ³⁴
Tacrolimus	СҮРЗА5	CPIC ⁴ ; FDA ³⁴
Tacrolimus	CYP3A4	PharmGKB
Tamoxifen	CYP2D6 (Activity Score)	CPIC ¹³ ; FDA ³⁴
Tamsulosin	CYP2D6	FDA ³⁴
Tenoxicam	CYP2C9 (Star Alleles)	CPIC ³³
Tetrabenazine	CYP2D6	FDA ³⁴
Thioridazine	CYP2D6	FDA ³⁴
Tolterodine	CYP2D6	FDA ³⁴
Tramadol	CYP2D6	CPIC ⁸ ; FDA ³⁴
Trimipramine	CYP2D6	CPIC ¹⁶ ; FDA ³⁴
Trimipramine	CYP2C19	CPIC ¹⁶
Valbenazine	CYP2D6	FDA ³⁴
Venlafaxine	CYP2D6	CPIC ⁵ ; FDA ³⁴
Viloxazine	CYP2D6	FDA ³⁴
Voriconazole	CYP2C19	CPIC ²⁴ ; FDA ³⁴
Vortioxetine	CYP2D6	CPIC ⁵ ; FDA ³⁴
Warfarin	CYP2C9	CPIC ¹⁷ ; FDA ³⁴
Warfarin	VKORC1	CPIC ¹⁷ ; FDA ³⁴
Zuclopenthixol	CYP2D6	DPWG ¹⁰





PATIENT INFORMATION

NAME: Sample Patient DOB: 01/Jan/1970 SEX AT BIRTH: Male SPECIMEN DETAILS

BARCODE: TST-DL-SAMPLE SAMPLE ID: 00001 TYPE: DBS COLLECTED: 13/Aug/2024 ORDERED BY

Nordic Laboratories REPORT GENERATED: 13/Aug/2024

References

https://www.genxys.com/lab-references



PATIENT INFORMATION				
NAME: Sample Patient				
DOB: 01/Jan/1970				
SEX AT BIRTH: Male				

SPECIMEN DETAILS BARCODE: TST-DL-SAMPLE SAMPLE ID: 00001 TYPE: DBS COLLECTED: 13/Aug/2024 ORDERED BY Nordic Laboratories REPORT GENERATED: 13/Aug/2024

Methods

DNA was extracted from dried blood spot (DBS) card by Chemagic 360 system (Revvity) and processed in a Biomark X platform (Standard Biotools) with Advanta[™] Pharmacogenomics Assay.

Limitations

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. 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 GenXys Health Care Systems. 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.

Laboratory Director

Dr Juha Matilainen, Laboratory Director, PhD

13/Aug/2024

Date of Signature



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	01/lan/1	1970
505.	01/3011/3	

SPECIMEN DETAILS BARCODE: TST-DL-SAMPLE SAMPLE ID: 00001 TYPE: DBS COLLECTED: 13/Aug/2024 ORDERED BY Nordic Laboratories REPORT GENERATED: 13/Aug/2024

Laboratory Report

The Laboratory Report contains your genetic results.

Gene	rsID	HGVS	HGVS Reference	Result
ABCB1	rs1045642	c.3645T>C	NM_001348945.2	G/G
ANKK1/DRD2	rs1800497	c.2137G>A	NM_178510.1	G/A
APOE	rs429358	c.388T>C	NM_000041.3	T/T
APOE	rs7412	c.526C>T	NM_000041.3	C/C
COMT	rs4680	c.472G>A	NM_000754.3	G/A
CYP1A2	rs12720461	c10+113C>T	NM_000761.4	C/C
CYP1A2	rs2069514	g.74745879G>A	NC_000015.10	G/G
CYP1A2	rs56107638	g.9427G>A	NG_061543.1	G/G
CYP1A2	rs72547513	c.558C>T	NM_000761.4	C/C
CYP1A2	rs762551	c9-154A>C	NM_000761.3	A/A
CYP2B6	rs28399499	c.983T>C	NM_000767.4	T/T
CYP2B6	rs3745274	c.516G>T	NM_000767.5	G/G
CYP2C19	rs12248560	g.94761900C>T	NC_000010.11	C/C
CYP2C19	rs12769205	c.332-23A>G	NM_000769.2	A/A
CYP2C19	rs17884712	c.431G>A	NM_000769.4	G/G
CYP2C19	rs28399504	c.1A>G	NM_000769.4	A/A
CYP2C19	rs4244285	c.681G>A	NM_000769.4	G/G
CYP2C19	rs4986893	c.636G>A	NM_000769.4	G/G
CYP2C19	rs56337013	c.1297C>T	NM_000769.4	C/C
CYP2C19	rs6413438	c.680C>T	NM_000769.4	C/C
CYP2C19	rs72552267	c.395G>A	NM_000769.4	G/G
CYP2C19	rs72558186	g.94781999T>A	NC_000010.11	Т/Т
CYP2C9	rs1057910	c.1075A>C	NM_000771.4	A/C
CYP2C9	rs1799853	c.430C>T	NM_000771.4	C/C
CYP2C9	rs28371685	c.1003C>T	NM_000771.4	C/C
CYP2C9	rs28371686	c.1080C>G	NM_000771.4	C/C
CYP2C9	rs56165452	c.1076T>C	NM_000771.4	Т/Т
CYP2C9	rs72558187	c.269T>C	NM_000771.4	Т/Т
CYP2C9	rs72558190	c.485C>A/T	NM_000771.4	C/C
CYP2C9	rs7900194	c.449G>A/C/T	NM_000771.4	G/G
CYP2C9	rs9332131	c.818del	NM_000771.4	Α/Α
CYP2C9	rs9332239	c.1465C>T	NM_000771.4	C/C
CYP2D6	rs1065852	c.100C>T	NM_000106.6	A/A
CYP2D6	rs1135822	c.358T>A	NM_000106.6	A/A
CYP2D6	rs1135840	c.1457G>C	NM_000106.6	G/G
CYP2D6	rs16947	c.886C>T	NM_000106.6	G/G
CYP2D6	rs201377835	g.42129910C>G	NC_000022.11	C/C
CYP2D6	rs267608319	c.1319G>A	NM_000106.6	C/C
CYP2D6	rs28371706	c.320C>T	NM_000106.6	G/G
CYP2D6	rs28371725	c.985+39G>A	NM_000106.5	C/C
CYP2D6	rs35/42686	c.//5del	NM_000106.6	1/1
CYP2D6	rs3892097	g.42128945C>1	NC_000022.11	1/1
	rs5030655	C.454del	NM_000106.6	A/A
	rs5030656	C.841_8430el		
	rs5030862	C.124G>A	NM_000106.6	
	rs5030865	C.505G>1/C/A	NM_000106.6:	
	rs5030867	C.9/1A>C	NM_000106.6	1/1
CTP2D6	1559421388	C.9/1A>C	INM_000106.6	C/C



SPECIMEN DETAILS BARCODE: TST-DL-SAMPLE SAMPLE ID: 00001 TYPE: DBS COLLECTED: 13/Aug/2024 ORDERED BY Nordic Laboratories REPORT GENERATED: 13/Aug/2024

Gene	rsID	HGVS	HGVS Reference	Result
CYP2D6	rs72549356	c.514_522dup	NM_000106.6	-/-
CYP2D6	rs72549346	c.1088_1089dup	NM_000106.6	-/-
CYP2D6	rs72549347	c.1030C>T	NM_000106.6	G/G
CYP2D6	rs72549352	c.805dup	NM_000106.6:	-/-
CYP2D6	rs72549353	c.765_768del	NM_000106.6	AGTT/AGTT
CYP2D6	rs72549354	c.635dup	NM_000106.6	-/-
CYP2D6	rs79292917	c.975G>A	NM_000106.6	C/C
CYP3A4	rs35599367	c.522-191C>T	NM_017460.6	G/G
CYP3A4	rs4987161	c.566T>C	NM_017460.6	A/A
CYP3A4	rs55785340	c.664T>C	NM_017460.6	A/A
CYP3A5	rs10264272	c.624G>A	NM_000777.5	C/C
CYP3A5	rs28365083	c.1193C>A	NM_000777.5	G/G
CYP3A5	rs41303343	c.1035dup	NM_000777.5	-/-
CYP3A5	rs776746	c.219-237A>G	NM_000777.5	C/C
Factor II	rs1799963	c.*97G>A	NM_000506.5	G/G
Factor V	rs6025	c.1601G>A	NM_000130.4	C/C
MTHFR	rs1801131	c.1286A>C	NM_005957.5	T/G
MTHFR	rs1801133	c.665C>T	NM_005957.5	A/G
OPRM1	rs1799971	c.118A>G	NM_000914.5	A/A
SLCO1B1	rs4149056	c.521T>C	NM_006446.5	T/T
VKORC1	rs9923231	g.31096368C>T	NC_000016.10	G/G (C/C) 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 (Copy/Copies)
CYP2D6	NG_008376.3 exon 9	2
CYP2D6_intron6	NG_008376.3 intron 6	3
CYP2D6_5pFlank	NG_008376.3 CYP2D6_5pFlank	3

Phenotype Table

Gene	Allele Result	Phenotype Result
CYP3A4	*1/*1	Normal Metabolizer
CYP2D6	*4/*4	Poor Metabolizer
CYP2C9	*1/*3	Intermediate Metabolizer
CYP2C19	*1/*1	Normal Metabolizer
SLCO1B1	*1/*1	Normal Function
CYP2B6	*1/*1	Normal Metabolizer
CYP3A5	*3/*3	Poor Metabolizer