cnsdose.

incitegenomics

Incite Genomics

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Patient

Name:
Test Patient

Dob:
May 5, 1972

Identifier:

Physician:
Dr Test Doctor

Clinic:
Good Practice

Report

Identifier:
IG-2411-2013-3055-5010

Date:
Nov 20, 2024

Sample identifier:
LP

Table of Contents

Medication Alerts

Test Patient has 16 medications with significant Gene-Drug interactions, where avoidance may be warranted.

16

Amitriptyline, Atorvastatin, Clomipramine, Codeine, Desipramine, Doxepin, Imipramine, Lovastatin, Nortriptyline, Paroxetine, Pitavastatin, Simvastatin, Tamoxifen, Tramadol, Trimipramine, Venlafaxine

Medication Guidance - Psychotropics

L Lower dose (less preferred) M Mid / Average dose (preferred) H Higher dose (less preferred)

Medication	Dose	Annotation
ANTI-ADHD		
Atomoxetine	L	Results in higher systemic concentrations and higher adverse reaction risk. Adjust titration interval and increase dosage if tolerated. Refer to FDA labeling for specific dosing recommendations. CYP2D6 (PM) • FDA
Clonidine	L	Standard precautions apply
Dextroamphetamine	L	Standard precautions apply
Guanfacine	M	Standard precautions apply
Lisdexamfetamine	M	Standard precautions apply
Methylphenidate	M	Standard precautions apply
Modafinil	M	Standard precautions apply
Viloxazine	M	May result in higher systemic concentrations. Monitor for adverse reactions and clinical effect. CYP2D6 (PM) • FDA
ANTICONVULSANTS		
Carbamazepine	M	Standard precautions apply
Lamotrigine	M	Standard precautions apply

Medication Guidance - Psychotropics

L Lower dose (less preferred) M Mid / Average dose (preferred) H Higher dose (less preferred)

Medication	Dose	Annotation
ANTICONVULSANTS		
Oxcarbazepine	M	Standard precautions apply
ANTIDEMENTIA		
Donepezil	L	Alters systemic concentrations.Monitor for adverse reactions or clinical effect. CYP2D6 (UM) OR CYP2D6 (PM) • FDA
ANTIDEPRESSANTS		
Agomelatine	H	Standard precautions apply
Amitriptyline		Where clinically appropriate consider an alternative agent (toxicity risk). CYP2D6 (PM) AND CYP2C19 (NM) • CPIC
Bupropion	H	Standard precautions apply
Citalopram	M	Standard precautions apply
Clomipramine		Where clinically appropriate consider an alternative agent (toxicity risk). CYP2D6 (PM) AND CYP2C19 (NM) • CPIC

Medication Guidance - Psychotropics

L Lower dose (less preferred) M Mid / Average dose (preferred) H Higher dose (less preferred)

Medication	Dose	Annotation
ANTIDEPRESSANTS		
Desipramine		Where clinically appropriate consider an alternative agent (toxicity risk). CYP2D6 (PM) • CPIC
Desvenlafaxine	M	Standard precautions apply
Dothiepin	L	Standard precautions apply
Doxepin		Avoid doxepin use. If a doxepin is warranted, consider a 50% reduction of recommended starting dose. CYP2D6 (PM) AND CYP2C19 (NM) • CPIC
Duloxetine	M	Standard precautions apply
Escitalopram	M	Standard precautions apply
Fluoxetine	L	Standard precautions apply
Fluvoxamine	L	Results in higher systemic concentrations. Use with caution. CYP2D6 (PM) • FDA
Imipramine		Avoid imipramine use. If a imipramine is warranted, consider a 50% reduction of recommended starting dose. CYP2D6 (PM) AND CYP2C19 (NM) • CPIC
Levomilnacipran	M	Standard precautions apply

Medication Guidance - Psychotropics

L Lower dose (less preferred) M Mid / Average dose (preferred) H Higher dose (less preferred)

Medication	Dose	Annotation
ANTIDEPRESSANTS		
Mianserin	L	Standard precautions apply
Milnacipran	M	Standard precautions apply
Mirtazapine	L	Standard precautions apply
Moclobemide	M	Standard precautions apply
Nortriptyline		Where clinically appropriate consider an alternative agent (toxicity risk). CYP2D6 (PM) • CPIC
Paroxetine		Where clinically appropriate consider an alternative agent. CYP2D6 (PM) • CPIC
Protriptyline	M	Results in higher systemic concentrations. Monitor for adverse reactions. CYP2D6 (PM) • FDA
Reboxetine	M	Standard precautions apply
Sertraline	M	Standard precautions apply
Trazodone	M	Standard precautions apply

Medication Guidance - Psychotropics

L Lower dose (less preferred) M Mid / Average dose (preferred) H Higher dose (less preferred)

Medication	Dose	Annotation
ANTIDEPRESSANTS		
Trimipramine		Where clinically appropriate consider an alternative agent. CYP2D6 (PM) AND CYP2C19 (NM) • CPIC
Venlafaxine		There are indications of an increased risk of side effects and a reduced chance of efficacy. Avoid venlafaxine. Antidepressants that are not metabolised by CYP2D6 - or to a lesser extent - include, duloxetine, mirtazapine, citalopram and sertraline. CYP2D6 (PM) • DPWG
Vilazodone	M	Standard precautions apply
Vortioxetine	L	Results in higher systemic concentrations. The maximum recommended dose is 10 mg. CYP2D6 (PM) • FDA
ANTIPSYCHOTICS		
Amisulpride	M	Standard precautions apply
Aripiprazole	L	Results in higher systemic concentrations and higher adverse reaction risk. Dosage adjustment is recommended. Refer to FDA labeling for specific dosing recommendations. CYP2D6 (PM) • FDA
Asenapine	M	Standard precautions apply

Medication Guidance - Psychotropics

L Lower dose (less preferred) M Mid / Average dose (preferred) H Higher dose (less preferred)

Medication	Dose	Annotation
ANTIPSYCHOTICS		
Brexpiprazole	L	Results in higher systemic concentrations. Dosage adjustment is recommended. Refer to FDA labeling for specific dosing recommendations. CYP2D6 (PM) • FDA
Cariprazine	L	Standard precautions apply
Chlorpromazine	L	Standard precautions apply
Clozapine	L	Results in higher systemic concentrations. Dosage reductions may be necessary. CYP2D6 (PM) • FDA
Haloperidol	L	There are indications for an increased risk of side effects. Consider using 60% of standard dose. CYP2D6 (PM) • DPWG
Iloperidone	L	Results in higher systemic concentrations and higher adverse reaction risk (QT prolongation). Reduce dosage by 50%. CYP2D6 (PM) • FDA
Lurasidone	M	Standard precautions apply
Olanzapine	M	Standard precautions apply
Oxcarbazepine	M	Standard precautions apply
Paliperidone	L	Standard precautions apply

Medication Guidance - Psychotropics

L Lower dose (less preferred) M Mid / Average dose (preferred) H Higher dose (less preferred)

Medication	Dose	Annotation
ANTIPSYCHOTICS		
Perphenazine	L	Results in higher systemic concentrations and higher adverse reaction risk. CYP2D6 (PM) • FDA
Pimozide	M	Results in higher systemic concentrations. Dosages should not exceed 0.05 mg/kg in children or 4 mg/day in adults. CYP2D6 (PM) • FDA
Quetiapine	M	Standard precautions apply
Risperidone	L	Alters systemic parent drug and metabolite concentrations. CYP2D6 (PM) • FDA
Thioridazine	M	Standard precautions apply
Ziprasidone	M	Standard precautions apply
Zuclopenthixol	M	The risk of side effects may be elevated. The genetic variation leads to decreased conversion of zuclopentixol, which causes the plasma concentration to be higher. CYP2D6 (PM) • DPWG
ANXIOLYTICS & HYPNOTICS		
Alprazolam	M	Standard precautions apply
Bromazepam	M	Standard precautions apply

Medication Guidance - Psychotropics

L Lower dose (less preferred) M Mid / Average dose (preferred) H Higher dose (less preferred)

Medication	Dose	Annotation
ANXIOLYTICS & HYPNOTICS		
Buspirone	M	Standard precautions apply
Clobazam	M	Standard precautions apply
Clonazepam	M	Standard precautions apply
Diazepam	M	Standard precautions apply
Diphenhydramine	L	Standard precautions apply
Flunitrazepam	M	Standard precautions apply
Melatonin	H	Standard precautions apply
Midazolam	M	Standard precautions apply
Nitrazepam	M	Standard precautions apply
Suvorexant	M	Standard precautions apply
Temazepam	M	Standard precautions apply
Zolpidem	M	Standard precautions apply
Zopiclone	M	Standard precautions apply

Medication Guidance - Psychotropics

L Lower dose (less preferred) M Mid / Average dose (preferred) H Higher dose (less preferred)

Medication	Dose	Annotation
BETA BLOCKERS		
Propranolol	L	May affect systemic concentrations. Monitor for adverse reactions and clinical effect. CYP2D6 (PM) • FDA
MOOD STABILIZERS / ANTICONVULSANTS		
Brivaracetam	M	Standard precautions apply
Carbamazepine	M	Standard precautions apply
Lamotrigine	M	Standard precautions apply
Perampanel	M	Standard precautions apply
Rufinamide	M	Standard precautions apply
Topiramate	M	Standard precautions apply
Valproic Acid	M	Standard precautions apply
OTHER PSYCHOTROPIC		
Bromocriptine	M	Standard precautions apply
Cabergoline	M	Standard precautions apply

Medication Guidance - Psychotropics

L Lower dose (less preferred) M Mid / Average dose (preferred) H Higher dose (less preferred)

Medication	Dose	Annotation
OTHER PSYCHOTROPIC		
Dapoxetine	M	Standard precautions apply
Disulfiram	M	Standard precautions apply
Naloxone	M	Standard precautions apply
Naltrexone	M	Standard precautions apply
Nicotine	M	Standard precautions apply
Rasagiline	M	Standard precautions apply
Ropinirole	M	Standard precautions apply
Rotigotine	M	Standard precautions apply
Selegiline	M	Standard precautions apply
OTHERS		
Amphetamine	L	May affect systemic concentrations and adverse reaction risk. Consider lower starting dosage or use alternative agent. CYP2D6 (PM) • FDA

Medication Guidance - Psychotropics

L Lower dose (less preferred) M Mid / Average dose (preferred) H Higher dose (less preferred)

Medication	Dose	Annotation
OTHERS		
Deutetrabenazine	M	Results in higher systemic concentrations and adverse reaction risk (QT prolongation). The maximum recommended dosage should not exceed 36 mg (maximum single dose of 18 mg). CYP2D6 (PM) • FDA
Galantamine	L	Results in higher systemic concentrations. Titrate dosage based on tolerability. CYP2D6 (PM) • FDA

Medication Guidance - Other Medications

Medication	Annotation
ANTI-DIABETIC	
Nateglinide	Standard precautions apply
ANTI-FUNGALS	
Flucytosine	Standard precautions apply
Voriconazole	Standard precautions apply
ANTI-NAUSEA	
Dronabinol	Standard precautions apply
Metoclopramide	Results in higher systemic concentrations and higher adverse reaction risk. Refer to FDA labeling for specific dosing recommendations. CYP2D6 (PM) • FDA
Ondansetron	Standard precautions apply
Tropisetron	Standard precautions apply
ANTI-VIRAL	
Abacavir	Standard precautions apply
Atazanavir	Standard precautions apply
Dolutegravir	Standard precautions apply

Medication Guidance - Other Medications

Medication	Annotation
ANTI-VIRAL	
Efavirenz	Consider initiating efavirenz with decreased dose of 400 mg/day. CYP2B6 (IM) • CPIC
Raltegravir	Standard precautions apply
ANTIARRHYTHMICS	
Flecainide	Consider 50% reduction of standard dose (tolerability risk). Therapeutic drug monitoring is recommended. CYP2D6 (PM) • DPWG
Propafenone	May be at increased risk of side effects. Reduce the dose to 30% of the standard dose, perform an ECG and monitor plasma concentrations. Avoid use in poor metabolizers taking a CYP3A4 inhibitor. CYP2D6 (PM) • DPWG
ANTIBIOTIC	
Flucloxacillin	Standard precautions apply
ANTICOAGULANTS	
Acenocoumarol	Standard precautions apply
Warfarin	CYP2C9 & VKORC1 gene variants impact individual warfarin dosing requirements. Consider a pharmacogenetic dosing algorithm for dose calculation (www.warfarindosing.org). CYP2C9 (Display By Default) OR VKORC1 (Display By Default) • CPIC

Medication Guidance - Other Medications

Medication	Annotation
ANTICONVULSANTS	
Phenytoin	Standard precautions apply
ANTIPLATELET AGENTS	
Clopidogrel	Standard precautions apply
BETA BLOCKERS	
Metoprolol	Results in higher systemic concentrations. CYP2D6 (PM) • FDA
Nebivolol	May result in higher systemic concentrations. Monitor for adverse reactions and clinical effect. CYP2D6 (PM) • FDA
BLOOD PRESSURE	
Carvedilol	Results in higher systemic concentrations and higher adverse reaction risk (dizziness). CYP2D6 (PM) • FDA
IMMUNOSUPPRESSANTS	
Azathioprine	Standard precautions apply

Medication Guidance - Other Medications

Medication	Annotation
IMMUNOSUPPRESSANTS	
Tacrolimus	Increase starting dose 1.5 to 2 times recommended starting dose. Total starting dose should not exceed 0.3 mg/kg/day. Use therapeutic drug monitoring to guide dose adjustments. CYP3A5 (IM) • CPIC
NON-STEROIDAL ANTI-INFLAMMATORY DRUGS (NSAID)	
Celecoxib	Standard precautions apply
Flurbiprofen	Standard precautions apply
Ibuprofen	Standard precautions apply
Lornoxicam	Standard precautions apply
Meloxicam	Standard precautions apply
Piroxicam	Standard precautions apply
Tenoxicam	Standard precautions apply
ONCOLOGY / ANTINEOPLASTIC	
Belinostat	Standard precautions apply
Belzutifan	Standard precautions apply

Medication Guidance - Other Medications

Medication	Annotation
ONCOLOGY / ANTINEOPLASTIC	
Capecitabine	Standard precautions apply
Erdafitinib	Standard precautions apply
Fluorouracil	Standard precautions apply
Gefitinib	Results in higher systemic concentrations and higher adverse reaction risk. Monitor for adverse reactions. CYP2D6 (PM) • FDA
Irinotecan	Standard precautions apply
Mercaptopurine	Standard precautions apply
Nilotinib	Standard precautions apply
Sacituzumab Govitecan	Standard precautions apply
Tamoxifen	Recommend alternative hormonal therapy such as an aromatase inhibitor for postmenopausal women or aromatase inhibitor along with ovarian function suppression in premenopausal women given that these approaches are superior to tamoxifen regardless of CYP2D6 genotype (PMID 26211827). Note, 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 (PMID 27226358, 21768473). CYP2D6 (PM) • CPIC
Tegafur	Standard precautions apply

Medication Guidance - Other Medications

Medication	Annotation
ONCOLOGY / ANTINEOPLASTIC	
Thioguanine	Standard precautions apply
OPIOID	
Codeine	Avoid codeine use because of possibility of diminished analgesia. If opioid use is warranted, consider a non-tramadol opioid. CYP2D6 (PM) • CPIC
Hydrocodone	Use hydrocodone label recommended age- or weight-specific dosing. If no response and opioid use is warranted, consider non-codeine and non-tramadol opioid. CYP2D6 (PM) • CPIC
Oliceridine	Results in higher systemic concentrations and higher adverse reaction risk (respiratory depression and sedation). CYP2D6 (PM) • FDA
Oxycodone	Standard precautions apply
Tramadol	Avoid tramadol use because of possibility of diminished analgesia. If opioid use is warranted, consider a non-codeine opioid. CYP2D6 (PM) • CPIC
OTHERS	
Abrocitinib	Standard precautions apply
Allopurinol	Standard precautions apply

Medication Guidance - Other Medications

Medication	Annotation
OTHERS	
Avatrombopag	Standard precautions apply
Carisoprodol	Standard precautions apply
Cevimeline	May result in higher adverse reaction risk. Use with caution. CYP2D6 (PM) • FDA
Elagolix	Standard precautions apply
Eliglustat	Alters systemic concentrations, effectiveness, and adverse reaction risk (QT prolongation). Coadministration with strong CYP3A inhibitors is contraindicated in intermediate and poor CYP2D6 metabolizers. Refer to FDA labeling for specific dosing recommendations. CYP2D6 (PM) OR CYP2D6 (UM) • FDA
Fesoterodine	Results in higher systemic active metabolite concentrations. CYP2D6 (PM) • FDA
Flibanserin	Standard precautions apply
Lofexidine	Results in higher systemic concentrations and higher adverse reaction risk. Monitor for orthostatic hypotension and bradycardia. CYP2D6 (PM) • FDA
Mavacamten	Standard precautions apply
Meclizine	May affect systemic concentrations. Monitor for adverse reactions and clinical effect. CYP2D6 (UM) OR CYP2D6 (IM) OR CYP2D6 (PM) • FDA

Medication Guidance - Other Medications

Medication	Annotation
OTHERS	
Mirabegron	Results in higher systemic concentrations. Monitor for adverse reactions and clinical effect. CYP2D6 (PM) • FDA
Pazopanib	Standard precautions apply
Pitolisant	Results in higher systemic concentrations. Use lowest recommended starting dosage. CYP2D6 (PM) • FDA
Siponimod	Standard precautions apply
Tamsulosin	Results in higher systemic concentrations. Monitor for adverse reactions and clinical effect. CYP2D6 (PM) • FDA
Tetrabenazine	Results in higher systemic concentrations. The maximum recommended single dose is 25 mg and should not exceed 50 mg/day. CYP2D6 (PM) • FDA
Tolterodine	Results in higher systemic concentrations and higher adverse reaction risk (QT prolongation). CYP2D6 (PM) • FDA
Valbenazine	Results in higher systemic active metabolite concentrations and higher adverse reaction risk (QT prolongation). Dosage reductions may be necessary. CYP2D6 (PM) • FDA

Medication Guidance - Other Medications

Medication	Annotation
PROTON PUMP INHIBITORS	
Dexlansoprazole	Standard precautions apply
Esomeprazole	Standard precautions apply
Lansoprazole	Standard precautions apply
Omeprazole	Standard precautions apply
Pantoprazole	Standard precautions apply
Rabeprazole	Standard precautions apply
STATINS	
Atorvastatin	Where clinically appropriate consider an alternative agent (toxicity risk) or commence with a lower dose and monitor for adverse reactions. SLCO1B1 (Decreased Function) • CPIC
Fluvastatin	Prescriber should be aware of possible increased risk for myopathy especially for doses >40mg per day. SLCO1B1 (Decreased Function) • CPIC
Lovastatin	Where clinically appropriate consider an alternative agent (toxicity risk) or commence with a lower dose and monitor for adverse reactions. SLCO1B1 (Decreased Function) • CPIC

Medication Guidance - Other Medications

Medication	Annotation
STATINS	
Pitavastatin	Where clinically appropriate consider an alternative agent (toxicity risk) or commence with a lower dose and monitor for adverse reactions. Possible increased risk for myopathy especially for doses >1mg. SLCO1B1 (Decreased Function) • CPIC
Pravastatin	Prescribe desired starting dose and adjust doses of pravastatin based on disease-specific guidelines. Possible increased risk for myopathy especially with doses >40mg per day. SLCO1B1 (Decreased Function) • CPIC
Rosuvastatin	Prescribe desired starting dose and adjust doses of rosuvastatin based on disease-specific guidelines. Be aware of possible increased risk for myopathy especially for doses >20mg. ABCG2 (Normal Function) AND SLCO1B1 (Decreased Function) • CPIC
Simvastatin	Where clinically appropriate consider an alternative agent (toxicity risk). (see Figure 1 of PMID: 35152405 for recommendations for alternative statins). SLCO1B1 (Decreased Function) • CPIC

Test Results

Name:
Test Patient

Dob:
May 5, 1972

Identifier:

Sample identifier:
LP

Collection date:
Nov 13, 2024

Received at lab date:
Nov 20, 2024

Clinical testing performed by:
Incite Genomics

Address:
[redacted]

Lab director:
[redacted]

Lab accreditation number:
020374

Referring lab name:

Referring lab requisition identifier:

ABCB1	
RS1045642	A/G
RS2032582	C/A
RS2229109	C/C

ABCC1	
RS212090	A/T

ABCG2	
NORMAL FUNCTION	G/G

CES1	
RS121912777	C/C
RS151291296	A/A
RS201065375	G/G

Test Results (continued)

COMT	
RS4680	A/A
CYP2B6	
INTERMEDIATE METABOLISER	*1/*6
CYP2C9	
NORMAL METABOLISER	*1/*1
CYP3A4	
NORMAL METABOLISER	*1/*1
DPYD	
NORMAL METABOLISER	*1/*1
OPRM1	
RS1799971	A/G
TPMT	
NORMAL METABOLISER	*1/*1
VKORC1	
RS9923231	C/T

CYP1A2	
HYPERINDUCER	*1F/*1F
CYP2C19	
NORMAL METABOLISER	*1/*1
CYP2D6	
POOR METABOLISER	*4/*5
CYP3A5	
INTERMEDIATE METABOLISER	*1A/*3
NUDT15	
NORMAL METABOLISER	*1/*1
SLCO1B1	
DECREASED FUNCTION	*1/*5
UGT1A1	
NORMAL METABOLISER	*1/*1

How to Use Guide

The dosage columns in the “Medication Guidance - Psychotropics” section of the report describe the dose range at which the medications are likely to be tolerable and effective for the patient.

LOWER DOSE

Genetically for this patient, the medications listed are likely tolerable and effective at the very low end of the recommended dose range, so may be less preferred.

MID / AVERAGE DOSE

Genetically for this patient, the medications listed are likely tolerable and effective at average recommended doses, so may be preferred.

HIGHER DOSE

Genetically for this patient, the medications listed are likely tolerable and effective at the very high end of the recommended dose range. Upward dose titration may be clinically appropriate, so may be less preferred.

Prescribers can use the dosing guidelines in one of three recommended ways:

Option 1:

Where the patient has already started on a medication, if the selected medication comes back in the lower-dose column, no need to increase the dose - await efficacy to emerge over the subsequent month. If the selected medication comes back in the average-dose column, escalate the dose to the average manufacturer recommended dose and await efficacy to emerge over the subsequent month. If the selected medication comes back in the higher-dose column, escalate the dose to the high end of the manufacturer recommended dose range (as tolerated) and await efficacy to emerge over the subsequent month. As non-genetic factors will significantly effect dosing in some patients, always continue to use clinical acumen in dosing.

Option 2:

If medications are listed in the average-dose column, select one of these medications and initiate at average manufacturer recommended dose - await efficacy to emerge over the subsequent month. There remains scope for the dose to be adjusted up or down if non-genetic factors impact optimal clinical dosing.

Option 3:

If no medications are listed in the average-dose column, select a medication in the lower-dose column, initiate at a low dose and await a month for efficacy to emerge. If all medications are listed in the higher-dose column (high hepatic and BBB block) start a medication at average dose and after a few days escalate the dose (as tolerated) toward the upper end of the manufacturer recommended dose range, then await efficacy to emerge over the subsequent month.

Disclaimers

REPORT KEYS

Phenotype Abbreviations

UM	Ultrarapid metaboliser
RM	Rapid metaboliser
NM	Normal metaboliser
IM	Intermediate metaboliser
PM	Poor metaboliser

Guidance Source

FDA	U.S. Food & Drug Administration / www.fda.gov
CPIC	Clinical Pharmacogenetics Implementation Consortium / www.cpicpgx.org
DPWG	Dutch Pharmacogenetics Working Group / www.upgx.eu

Recommendation Severities

Medication	Indicates a Gene-Drug Avoidance recommendation has been identified.
Medication	Indicates a Gene-Drug Cautionary recommendation has been identified.
Medication	Indicates standard precations apply.

METHODOLOGY

Analysis was performed using methods developed and validated by Incite Genomics. Patient genomic DNA was analyzed by the MassARRAY® System using primers and probes designed by Agena Bioscience and Incite Genomics. This assay detects the variants and alleles listed below.

ABCB1	rs1045642, rs2032582, rs2229109
ABCC1	rs212090
ABCG2	rs2231137, rs2231142
CES1	rs121912777, rs151291296, rs201065375
COMT	rs4680
CYP1A2	*1A, *1C, *1F, *1K, *1L *7, *11
CYP2B6	*6, *18
CYP2C19	*2, *3, *4, *5, *6, *7, *8, *17
CYP2C9	*2, *3, *4, *5, *6, *8, *11, *12, *13, *15
CYP2D6	*2, *3, *4, *5, *6, *7, *8, *9, *10, *11, *12, *14A, *14B, *15, *17, *18, *19, *20, *29, *36, *41, duplications, hybrids
CYP3A4	*2, *17, *22
CYP3A5	*2, *3, *6, *7
DPYD	*2A, *13, HapB3
NUDT15	*3
OPRM1	rs1799971
SLCO1B1	rs4149056
TPMT	*2, *3A, *3B, *3C, *4
UGT1A1	*28, *36, *37
VKORC1	rs9923231

Disclaimers (continued)

ASSAY LIMITATIONS

Rare variants not detected by this assay may be present but not reported. Such undetected genetic and/or non-genetic factors such as drug-drug interactions, may impact the phenotype.

Test performance may be limited by the presence of PCR inhibitors in the patients sample or by a low quantity or quality of extracted DNA. These interferents and limitations typically produce failure to amplify (no result) rather than an inaccurate result. The presence of rare or otherwise unidentified nearby variants may also affect test performance at the targeted locations. Test results and clinical interpretation may be inaccurate in patients who have undergone tissue transplant therapy.

LIABILITY DISCLAIMERS

Warning: All medication decisions & adjustments must be in consultation with the treating clinician.

*Genetic guidance is from combined hepatic metaboliser and blood-brain-barrier permeability status. Non-genetic factors influence central nervous system (CNS) bioavailability & dosing. Renal & hepatic impairment, brain trauma, & advanced age may necessitate dose reduction. Medication interactions, smoking and certain foods may influence dosing. The clinical utility of CNSDose is based on level 1b evidence – a double blind randomized controlled trial with narrow confidence intervals [1, 2]. The report is over 85% accurate in determining Desvenlafaxine dosage for remission in Caucasians with co-morbidity free depression [3]. Utility in other ethnicities is undetermined. Efficacy of CNSDose in depression with comorbidities has not been established, but is currently being studied. The report is to be used as just one optional part of the clinical decision making process [3-6]. Regular review by an experienced clinician is needed to gauge efficacy, tolerability, and safety of medication [3-6]. The report is clinical grade (not investigational) and complies with relevant jurisdictional partner laboratory regulations. Bupropion, Citalopram, Levomilnacipran, Trazodone, Vilazodone, & Vortioxetine were not included in the original clinical trials which only examined the report listed antidepressants. [1,2]. However, guidance is based on the same methods used in the clinical trials, but such guidance should be used with greater caution. Some listed medications may not be available in certain countries. United States prescribers to consider 'pharmacogenomic biomarkers in drug labelling': https://www.fda.gov/drugs/science-and-research-drugs/table-pharmacogenomic-biomarkers-drug-labeling. CNSDose is a registered trademark, with patent pending.

[1] Singh AB (2015). Improved antidepressant remission in major depression via a pharmacokinetic pathway polygene pharmacogenetic report. Clinical Psychopharmacology Neuroscience, 13.2:150. [2] Bousman CA & Hopwood M (2016). Commercial pharmacogenetic-based decision-support tools in psychiatry. The Lancet Psychiatry, 3.6:585-590. [3] van Westrhenen, Roos, et al. (2021) 'Policy and Practice Review: A First Guideline on the Use of Pharmacogenetics in Clinical Psychiatric Practice.' Frontiers in pharmacology 12: 187. [4] Malhi, Gin S., et al. (2021) 'The 2020 Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for mood disorders.' Australian & New Zealand Journal of Psychiatry 55.1 : 7-117. [5] Eap, C. B., et al. (2021) 'Tools for optimising pharmacotherapy in psychiatry (therapeutic drug monitoring, molecular brain imaging and pharmacogenetic tests): focus on antidepressants.' The World Journal of Biological Psychiatry : 1-68. [6] Arranz, M. J., Salazar, J., & Hernández, M. H. (2021). Pharmacogenetics of antipsychotics: Clinical utility and implementation. Behavioural Brain Research, 401, 113058.