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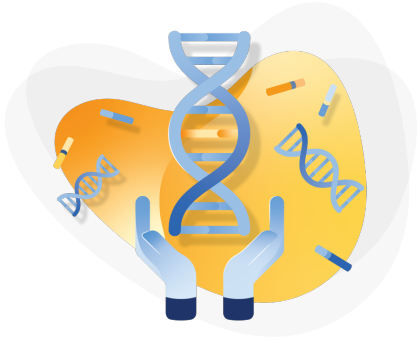

John Doe's
Personalized Insights™ Ultra Report

A confidential personalized guide to how the patient's unique genetic information affects their body's response to medications.

Report PDF Downloaded	2024-03-26	**Patient ID**	12345678901236
PDF Type	Full Report	**Date Of Birth**	1980-01-01

Guide to Understanding Your Report	A how-to guide for reading and understanding the Personalized Insights™ Report.
Important Test Insights	A list of the medications included in this report that are classified as either DO NOT USE or USE WITH CAUTION, based on the genetic variants that were detected.
Your Report Overview	A high-level overview/summary of the test results for all medications included in this report.
Your Detailed Recommendations	Detailed recommendations for all medications included in this report.
Analysis of Your Gene Profile	A complete list of the genes tested/variants detected that are known to impact responses to the medications included in this report.
Test Information	Glossary of terms, test information & legal content.

Note: The online version of this report is updated every 6 months, based on the latest research and recommendations. To view the full online interactive version of this report (reflecting the most up-to-date recommendations) please log on to Inagene Portal at **https://patients.inagene.com**.

If you have any questions about this report, contact us by email at **info@inagene.com**.

Guide to Understanding Your Report

This section provides a how-to guide for reading and understanding the Personalized Insights™ Ultra Report. The FULL report (which includes detailed insights and recommendations for ALL medications included in this report) is available to view in the section called **"Detailed Recommendations"**. You can also view a high-level summary of the overall results in the section called **"Report Overview"**.

Note: To view and print a shortened/customized version of this report that includes only those medications most relevant to you (for example, to include only those medications used in a specific therapeutic area, or to include only those medications currently being taken) log on to the online version of this report on your Inagene Portal account at **https://patients.inagene.com**, and click on the **"Search and Customize My Results"** tab at the top of the page.

How are Your Results Organized?

Four classifications provide you with quick insight into the general results of the test for each specific medication.

Do Not Use

When a medication has been labelled as **"Do Not Use"** it means that **this medication is NOT recommended, and using an alternative medication is recommended instead**, based on possible lack of effect or possible adverse side effects that could occur in individuals with this unique genetic profile. (Note: There may be rare circumstances where the prescriber may still choose to prescribe the medication based on his/her discretion, lack of suitable alternatives, and/or other non-genetic factors.)

Use with Caution

When a medication is labelled **"Use with Caution"** it means that **one or more gene-drug interactions have been identified that may impact the drug's effectiveness or tolerability.** Based on available data, **response to the medication is expected to be different from most people** (for example, it may not provide the expected therapeutic effect at the standard recommended dose, or may result in increased risk of side effects in individuals with this unique genetic profile.)

For any medications labelled as **"Use with Caution"**, you should familiarize yourself with the identified risks and personalized recommendations provided in the Detailed Recommendations section of the report. This is also important information to share with any prescribers/the health care team, as it may impact decisions about treatment. In some cases, a different dose may be required, and in other cases the medication may not be recommended at all, based on the predicted response.

Use as Directed*

When a medication has been labelled **"Use As Directed*"** it means that **no altered gene-drug interaction has been identified**, therefore based on currently available data**, **response to the medication is expected to be similar to most other individuals at standard doses**, and no individualized prescribing recommendations are provided as a result.

Use as Directed/Preferred*

When a medication has been labelled **"Use As Directed – Preferred*"** it means that one or more altered gene-drug interactions have been identified that have been linked to an increased likelihood of responding to the medication (in other words, based on available data**, this medication has a higher likelihood of being effective for the individual tested, than it would be for most people (based on their unique genetic profile). In some cases (not always), an individual prescribing recommendation may be provided (for example, should an altered dose be recommended).

IMPORTANT NOTES

* If a medication is categorized as **“Use As Directed”** or **“Use As Directed/Preferred”** it does not mean the medication is guaranteed to work well, or that no side effects will be experienced. Genetics is only one of many factors impacting how individuals will respond to medications. Other factors influencing drug response may include environment, overall health, lifestyle choices, other health conditions, other medications being taken, and other factors.

** Pharmacogenetics studies are still ongoing and additional drug – gene interactions may be discovered in the future.

Important Test Insights

Below you will find a list of those medications that are classified as: “DO NOT USE”, as well as those categorized as “USE WITH CAUTION”, based on the gene-drug interactions that were identified through testing.

IMPORTANT: Please review the previous section entitled “Guide to Understanding the Report” for guidance on how to interpret these results. Refer to the section entitled “Detailed Recommendations” in the pages that follow to view the detailed, personalized recommendations provided for each of the drugs listed below.

Medications Classified As: Do Not Use

- Amitriptyline
- Clomipramine
- Codeine
- Desipramine
- Doxepin
- Imipramine
- Lovastatin
- Nortriptyline
- Simvastatin
- Tamoxifen
- Thioridazine
- Tramadol
- Trimipramine
- Venlafaxine
- Voriconazole

Medications Classified As: Use with Caution

- Amifampridine
- Amphetamine
- Aripiprazole
- Atomoxetine
- Atorvastatin
- Azathioprine
- Brexpiprazole
- Carvedilol
- Cisplatin
- Citalopram
- Clozapine
- Darifenacin
- Deutetrabenazine
- Dexlansoprazole
- Dextromethorphan and Buproprion
- Dextromethorphan and Quinidine
- Donepezil
- Duloxetine
- Eliglustat
- Escitalopram
- Fesoterodine
- Flecainide
- Fluoxetine and Olanzapine
- Fluvastatin
- Fluvoxamine
- Galantamine
- Gefitinib
- Haloperidol
- Hydrocodone
- Iloperidone
- Isoniazid
- Lansoprazole
- Lofexidine
- Mercaptopurine
- Metoclopramide
- Metoprolol
- Mirabegron
- Mirtazapine
- Modafinil
- Nebivolol
- Omeprazole
- Oxycodone
- Pantoprazole
- Paroxetine
- Peginterferon alfa-2a
- Perphenazine
- Pimozide
- Pitolisant
- Pravastatin
- Propafenone
- Propranolol
- Protriptyline
- Rifampin
- Risperidone
- Rosuvastatin
- Tamsulosin
- Tetrabenazine

- Thioguanine
- Tolterodine
- Vortioxetine
- Warfarin
- Zuclopenthixol

Your Report Overview

This section provides an overall (high-level) summary of the test results. Please review the previous section entitled “Guide to Understanding the Report” for guidance on how to interpret these results. Refer to the section entitled “Detailed Recommendations” in the pages that follow to view the detailed, personalized recommendations provided for each of the drugs listed.

Note: If you are looking for a medication that does NOT appear on this summary, it is either because that medication is not currently available in the US and Canada, or because (to the best of our knowledge) there are no actionable associations for that medication based on the genes we test for at this time. For a list of all the medications included on Inagene’s tests, copy and paste (or type) this URL into the browser: https://patients.inagene.com/drug-list

Report Overview results are sorted by

Drug Name | Drug Alpha

Tip: The online version of this report allows you to sort this drug summary by drug class, or by alphabetical order, by generic drug name or brand name, and to filter by therapeutic area. Access the online version of the report by logging on to Inagene Portal at patients.inagene.com.

A

- Abacavir
- Acetylsalicylic Acid
- Allopurinol
- Amifampridine
- Amitriptyline
- Amphetamine
- Aripiprazole
- Atazanavir
- Atomoxetine
- Atorvastatin
- Azathioprine

B

- Belzutifan
- Brexpiprazole
- Brivaracetam
- Bupivacaine
- Bupropion

C

- Capecitabine
- Carbamazepine
- Carvedilol
- Celecoxib
- Chloroquine
- Ciprofloxacin
- Cisplatin
- Citalopram
- Clobazam
- Clomipramine
- Clopidogrel
- Clozapine
- Codeine

D

- Dabrafenib
- Dapsone
- Darifenacin
- Desflurane
- Desipramine
- Deutetrabenazine
- Dexlansoprazole
- Dextromethorphan and Buproprion
- Dextromethorphan and Quinidine
- Diazepam
- Dolutegravir
- Donepezil
- Doxepin
- Dronabinol
- Duloxetine

E

- Efavirenz
- Elagolix
- Eliglustat
- Eltrombopag
- Erdafitinib
- Erlotinib
- Escitalopram
- Esomeprazole
- Ethinyl estradiol

F

- Fesoterodine
- Flecainide
- Flibanserin
- Fluorouracil
- Fluoxetine and Olanzapine
- Flurbiprofen
- Fluvastatin
- Fluvoxamine
- Fosphenytoin

G

- Galantamine
- Gefitinib
- Glimepiride
- Glyburide

H

- Haloperidol
- Hydrocodone
- Hydroxychloroquine

I

- Ibuprofen
- Iloperidone
- Imipramine
- Irinotecan
- Isoflurane
- Isoniazid

L

- Lansoprazole
- Lidocaine
- Lidocaine and Prilocaine
- Lidocaine and Tetracaine
- Lofexidine
- Lovastatin

M

- Meloxicam
- Mepivacaine
- Mercaptopurine
- Methadone
- Methotrexate
- Methoxyflurane
- Methylene blue
- Metoclopramide
- Metoprolol
- Mirabegron
- Mirtazapine
- Modafinil

N

- Nebivolol
- Nevirapine
- Nilotinib
- Nitrofurantoin
- Nitroglycerin
- Norelgestromin
- Norfloxacin
- Nortriptyline

O

- Ofloxacin
- Omeprazole
- Ondansetron
- Ospemifene
- Oxycodone

P

- Pantoprazole
- Paroxetine
- Pazopanib

- Peginterferon alfa-2a
- Perphenazine
- Phenytoin
- Pimozide
- Piroxicam
- Pitolisant
- Pravastatin
- Prilocaine
- Primaquine
- Propafenone
- Propranolol
- Protriptyline

Q

- Quetiapine
- Quinine

R

- Rabeprazole
- Rasburicase
- Rifampin
- Risperidone
- Ropivacaine
- Rosuvastatin

S

- Salmeterol
- Sertraline
- Sevoflurane
- Simvastatin
- Siponimod
- Succinylcholine
- Sulfadiazine
- Sulfamethoxazole and Trimethoprim
- Sulfasalazine

T

- Tacrolimus
- Tamoxifen
- Tamsulosin
- Tetrabenazine
- Thioguanine
- Thioridazine
- Tolterodine
- Tramadol
- Trimipramine

V

- Venlafaxine
- Vitamin C
- Voriconazole
- Vortioxetine

W

- Warfarin

Z

- Zuclopenthixol

Your Detailed Recommendations

This section provides a detailed look at the predicted response to all medications included in this report, and includes any/all personalized recommendations regarding their use. (The drugs are listed by generic name and in alphabetical order.)

Note: Please review the previous section entitled "Guide to Understanding the Report" for guidance on how to interpret these results.

Abacavir

Kivexa, Triumeq, Trizivir, Ziagen

Antiretrovirals - NNRTI

Acetylsalicylic Acid

ASA, Aggrenox, Aspirin

Nonsteroidal Inflammatory Drugs (NSAIDs)

Allopurinol

Aloprim, Zyloprim

Uricosuric/Antigout Agents

Amifampridine

Firdapse, Ruzurgi

Potassium channel blocker

Response to medication may be impacted by gene: **NAT2**

You may have an increased risk of experiencing higher medication levels in your body, and an increased risk of side effects. The lowest recommended starting dose should be prescribed. Side effects should be monitored closely.

Source: FDA

Amitriptyline

Elavil

Antidepressants - Tricyclic

Response to medication may be impacted by gene: **CYP2D6 & CYP2C19**

You should not be prescribed this medication. If use is warranted, your prescriber should use blood tests specific to the medication to guide dose adjustments.

Source: CPIC - A

Amphetamine

Adderall XR, Adzenys, Evekeo

ADHD - Stimulants and Non-Stimulants

Response to medication may be impacted by gene: **CYP2D6**

You may have an increased risk of experiencing a higher concentration of this medication in your body, and an increased risk of side effects. Your prescriber should consider a lower starting dose or an alternative medication.

Source: FDA

Aripiprazole

Abilify

Psychotropics 2nd Generation Antipsychotics

Response to medication may be impacted by gene: **CYP2D6**

You have an increased risk of experiencing a higher concentration of this medication in your body, and an increased risk of side effects. Your prescriber should adjust the dose to no more than 10 mg/day or 300 mg/month (68-75% of the normal maximum dose).

Source: DPWG

Atazanavir

Evotaz, Reyataz

Antiretrovirals - Protease Inhibitor

Atomoxetine

Strattera

ADHD - Stimulants and Non-Stimulants

Response to medication may be impacted by gene: **CYP2D6**

For children: Start with 0.5 mg/kg/day. If no response after 2 weeks and no adverse effects, check plasma concentration after 2-4 hours for intermediate metabolizers or 4 hours for poor metabolizers. Increase dose to approach 400ng/ml if concentration is < 200 ng/ml. Reduce dose if there are side effects. For adults: Start with 40 mg/day, increase to 80 mg/day if no response after 2 weeks. Check plasma concentration if response is inadequate. Increase dose if concentration is < 200 ng/ml. Reduce dose if there are side effects.

Source: CPIC - A

Atorvastatin

Caduet, Lipitor, Lypqozet

Statins - HMG-COA Reductase Inhibitors

Response to medication may be impacted by gene: **APOE**

This medication may be less effective for you.

Source: PharmGKB-2A

Response to medication may be impacted by gene: **SLCO1B1**

Your prescriber should select a starting dose less than or equal to 40 mg and should adjust based on disease-specific guidelines. Your prescriber should be aware of possible increased risk of muscle-related side effects ("myopathies"), especially if prescribing a dose of 40 mg. If a dose greater than 40 mg is needed for additional effect, your prescriber should consider combination treatment (i.e., atorvastatin plus non-statin treatment guideline directed therapy).

Source: CPIC - A

Azathioprine

Imuran

Immunosuppressants

Response to medication may be impacted by gene: **TPMT & NUDT15**

Your prescriber should consider a dose reduction. The starting dose should be 30-80% of the normal dose and should be adjusted based on the degree of bone marrow suppression (myelosuppression) and disease-specific guidelines. They should allow 2-4 weeks after each dose adjustment, which is when this medication reaches a consistent level in your body.

Source: CPIC - A

Belzutifan

Welireg

Antineoplastic Agents

Brexpiprazole

Rexulti

Psychotropics 2nd Generation Antipsychotics

Response to medication may be impacted by gene: **CYP2D6**

You are risk of experiencing a higher concentration of this medication in your body. Your prescriber should select half of the usual dose. If you are also taking other medications (known "strong or moderate CYP3A4 inhibitors"),or if you are a CYP3A4 poor metabolizer, your prescriber should select a quarter of the usual dose.

Source: DPWG

Brivaracetam

Briviact, Brivlera

Anticonvulsants

Bupivacaine

Exparel, Marcaine, Sensorcaine, Vivacaine

Local Anesthetics

Bupropion

Contrave, Forfivo XL, Wellbutrin, Zyban

Antidepressants - Others

Capecitabine

Xeloda

Antineoplastic Agents

Carbamazepine

Carbatrol, Equetro, Tegretol

Anticonvulsants

Carvedilol

Coreg

Beta-Blockers

Response to medication may be impacted by gene: **CYP2D6**

You are at an increased risk of experiencing a higher concentration of medication in your body, and an increased risk of side effects (dizziness).

Source: FDA

Celecoxib

Celebrex, Seglentis

Nonsteroidal Inflammatory Drugs (NSAIDs)

Chloroquine — **Antimalarials**

Aralen

Ciprofloxacin — **Antibiotics**

Cipro

Cisplatin — **Antineoplastic Agents**

Platinol

Response to medication may be impacted by gene: **TPMT**

You may have an increased risk of ear-related side effects (ototoxicity).

Source: FDA

Citalopram — **Antidepressants - SSRI**

Celexa

Response to medication may be impacted by gene: **CYP2C19**

Your prescriber should initiate therapy with recommended starting dose. If you do not adequately respond to recommended maintenance dosing, they should consider slowly adjusting to a higher maintenance dose or switching to a clinically appropriate alternative antidepressant.

Source: CPIC - A

Clobazam — **Psychotropics - Benzodiazepines**

Frisium

Clomipramine — **Antidepressants - Tricyclic**

Anafranil

Response to medication may be impacted by gene: **CYP2D6 & CYP2C19**

You should not be prescribed this medication. If use is warranted, your prescriber should use blood tests specific to the medication to guide dose adjustments.

Source: CPIC - A

Clopidogrel — **Antithrombotics**

Plavix

Clozapine — **Psychotropics 2nd Generation Antipsychotics**

Clozaril

Response to medication may be impacted by gene: **CYP2D6**

You are at an increased risk of experiencing a higher concentration of medication in your body, and your prescriber should consider selecting a lower dose.

Source: FDA

Codeine

Codeine Contin, Tylenol with Codeine

Opioids

Response to medication may be impacted by gene: **CYP2D6**

You should not be prescribed this medication as it is possible that it will not control your pain. If you require an opioid, your prescriber should consider also avoiding tramadol.

Source: CPIC - A

Dabrafenib

Tafinlar

Antineoplastic Agents

Dapsone

Dapsone

Antibiotics

Darifenacin

Enablex

Antimuscarinics

Response to medication may be impacted by gene: **CYP2D6**

You may have an increased risk of experiencing a higher concentration of this medication in your body

Source: FDA

Desflurane

Suprane

General & Inhalational Anesthesia

Desipramine

Norpramin

Antidepressants - Tricyclic

Response to medication may be impacted by gene: **CYP2D6**

Desipramine is part of the "tricyclic" medication class. You should avoid this class due to potential side effects. Your prescriber should consider an alternative medication not processed (metabolized) by CYP2D6. If desipramine use is warranted, your prescriber should consider using one half (50%) of the recommended starting dose and should use blood tests specific to the medication ("therapeutic drug monitoring") to guide dose adjustments.

Source: CPIC

Deutetrabenazine

Austedo

Neurology-other (VMAT2 Inhibitor)

Response to medication may be impacted by gene: **CYP2D6**

You are at an increased risk of experiencing a higher concentration of medication in your body and an increased risk of a heart side effect ("QT prolongation"). The maximum recommended dose that should be prescribed is 18 mg, and the maximum daily amount prescribed should not exceed 36 mg.

Source: FDA

Dexlansoprazole

Dexilant

Proton-Pump Inhibitors (PPIs)

Response to medication may be impacted by gene: **CYP2C19**

Your prescriber should select a 100% increase in the starting daily dose. The daily dose may prescribed in divided doses. Effectiveness should be monitored.

Source: CPIC - A

Dextromethorphan and Buproprion

Auvelity

Antidepressants - Others

Response to medication may be impacted by gene: **CYP2D6**

If this medication is prescribed for you, you should be prescribed one tablet daily in the morning.

Source: FDA

Dextromethorphan and Quinidine

Nuedexta

Neurology-other (VMAT2 Inhibitor)

Response to medication may be impacted by gene: **CYP2D6**

You may be at an increased risk of experiencing side effects (toxicity) from this medication.

Source: FDA

Diazepam

Diastat, Valium

Psychotropics - Benzodiazepines

Dolutegravir

Dovato, Juluca, Tivicay, Triumeq

Antiretrovirals

Donepezil

Aricept, Namzaric

Cholinergic Agents

Response to medication may be impacted by gene: **CYP2D6**

You may be at increased risk of experiencing an altered concentration of medication in your body.

Source: FDA

Doxepin

Silenor, Sinequan

Antidepressants - Tricyclic

Response to medication may be impacted by gene: **CYP2D6 & CYP2C19**

You should not be prescribed this medication. If use is warranted, your prescriber should use blood tests specific to the medication to guide dose adjustments.

Source: CPIC - A

Duloxetine

Cymbalta

Antidepressants - SNRI

Response to medication may be impacted by gene: **CYP2D6**

This medication is metabolized by CYP2D6 and CYP1A2. Concomitant administration of duloxetine 40 mg twice daily with fluvoxamine 100 mg, a potent CYP1A2 inhibitor, to CYP2D6 poor metabolizer subjects has resulted in a 6-fold increase in duloxetine levels in the body.

Source: https://www.pharmgkb.org/labelAnnotation/PA166105010

Efavirenz

Atripla, Sustiva

Antiretrovirals - NRTI

Elagolix

Oriahnn, Orilissa

Other

Eliglustat

Cerdelga

Endocrinology - Others

Response to medication may be impacted by gene: **CYP2D6**

You are at an increased risk of altered effectiveness, specific heart side effect risk ("QT prolongation"), and medication concentration in your body. Your prescriber should select a dose of 84 mg once daily.

Source: FDA

Eltrombopag

Promacta, Revolade

Hematopoietic Agents

Erdafitinib

Balversa

Antineoplastic Agents

Erlotinib

Tarceva

Antineoplastic Agents

Escitalopram

Cipralex, Lexapro

Antidepressants - SSRI

Response to medication may be impacted by gene: **CYP2C19**

Your prescriber should initiate therapy with recommended starting dose. If you do not adequately respond to recommended maintenance dosing, they should consider slowly adjusting to a higher maintenance dose or switching to a clinically appropriate alternative antidepressant.

Source: CPIC - A

Esomeprazole

Nexium, Vimovo

Proton-Pump Inhibitors (PPIs)

Ethinyl estradiol

Alesse, Evra, Linessa, Lolo, Marvelon, Nuvaring, Seasonale, Seasonique, Yasmin, Yaz

Hormonal Contraceptives

Fesoterodine

Toviaz

Antimuscarinics

Response to medication may be impacted by gene: **CYP2D6**

You are at an increased risk of experiencing a higher concentration of pharmacologically active medication byproducts(active metabolites) in your body.

Source: FDA

Flecainide

Flecainide

Antiarrhythmics

Response to medication may be impacted by gene: **CYP2D6**

You may have reduced elimination (clearance) of this medication from your body.

Source: PharmGKB - 1A

Flibanserin

Addyi

Endocrinology - Others

Fluorouracil

Efudex

Antineoplastic Agents

Fluoxetine and Olanzapine

Symbyax

Antidepressants - Others

Response to medication may be impacted by gene: **CYP2D6**

You may have reduced elimination (clearance) of this medication from your body.

Source: FDA

Flurbiprofen

Flurbiprofen

Nonsteroidal Inflammatory Drugs (NSAIDs)

Fluvastatin

Lescol

Statins - HMG-COA Reductase Inhibitors

Response to medication may be impacted by gene: **SLCO1B1 & CYP2C9**

Your prescriber should select their desired starting dose. Your dose should be adjusted based on disease-specific guidelines. Your prescriber should be aware of possible increase risk of muscle-related side effects (myopathies), particularly with doses greater than 40 mg per day.

Source: CPIC - A

Fluvoxamine

Luvox

Antidepressants - SSRI

Response to medication may be impacted by gene: **CYP2D6**

Your prescriber should consider a 25% to 50% reduction of the recommended starting dose and gradually increase to dose to achieve benefit or prescribe an alternative medication not processed (metabolized) by CYP2D6.

Source: CPIC - A

Fosphenytoin — **Anticonvulsants**

Cerebyx

Galantamine — **Cholinergic Agents**

Razadyne, Reminyl

Response to medication may be impacted by gene: **CYP2D6**

You are at increased risk of experiencing a higher concentration of medication in your body. Your prescriber should gradually adjust your dose based on whether you experience side effects that you cannot tolerate.

Source: FDA

Gefitinib — **Antineoplastic Agents**

Iressa

Response to medication may be impacted by gene: **CYP2D6**

You are at increased risk of experiencing a higher concentration of medication in your body and a higher risk of side effects (that should be monitored).

Source: FDA

Glimepiride — **Antidiabetic Agents**

Amaryl

Glyburide — **Antidiabetic Agents**

Diabeta

Haloperidol — **Psychotropics 1st Generation Antipsychotics**

Haldol

Response to medication may be impacted by gene: **CYP2D6**

You may be at an increased risk of experiencing a higher concentration of medication in your body and an increased risk of side effects. Your prescriber should use 60% of the standard dose.

Source: DPWG

Hydrocodone — **Opioids**

Dalmacol, Hycodan, Vicodin

Response to medication may be impacted by gene: **CYP2D6**

Your prescriber should consult standard manufacturer provided dosing specific to your age or weight when prescribing this medication for you. If you don't respond to this medication but you require an opioid, your prescriber should consider avoiding specific medications (codeine and tramadol).

Source: CPIC

Hydroxychloroquine — **Antimalarials**

Plaquenil

Ibuprofen — **Nonsteroidal Inflammatory Drugs (NSAIDs)**

Advil, Motrin

Iloperidone

Fanapt

Psychotropics 2nd Generation Antipsychotics

Response to medication may be impacted by gene: **CYP2D6**

You are at increased risk of experiencing a higher concentration of medication in your body and an increased risk of side effects (QT prolongation). Your prescriber should consider reducing your dose by 50%.

Source: FDA

Imipramine

Tofranil

Antidepressants - Tricyclic

Response to medication may be impacted by gene: **CYP2D6 & CYP2C19**

You should not be prescribed this medication. If use is warranted, your prescriber should use blood tests specific to the medication to guide dose adjustments.

Source: CPIC - A

Irinotecan

Camptosar, Onivyde

Antineoplastic Agents

Isoflurane

Forane

General & Inhalational Anesthesia

Isoniazid

Isoniazid

Antibiotics

Response to medication may be impacted by gene: **NAT2**

You may be at an increased risk of developing toxic liver disease when treated with isoniazid regimens for tuberculosis. However, conflicting evidence has been reported.

Source: PharmGKB - 1B

Lansoprazole

Hp-PAC, Prevacid, Prevpac

Proton-Pump Inhibitors (PPIs)

Response to medication may be impacted by gene: **CYP2C19**

Your prescriber should increase your starting dose by 100%. Your daily dose may be divided into multiple doses. You should be monitored for effectiveness.

Source: CPIC - A

Lidocaine

Xylocaine

Local Anesthetics

Lidocaine and Prilocaine

Oraqix

Local Anesthetics

Lidocaine and Tetracaine

Pliaglis

Local Anesthetics

Lofexidine

Lucemyra

Alpha2-Adrenergic Agonist

Response to medication may be impacted by gene: **CYP2D6**

You are at an increased risk of experiencing a higher concentration of medication in your body and a greater risk of side effects. You should be monitored for specific side effects (orthostatic hypotension, bradycardia).

Source: FDA

Lovastatin

Altoprev, Mevacor

Statins - HMG-COA Reductase Inhibitors

Response to medication may be impacted by gene: **SLCO1B1**

You may be at increased risk of muscle-related side effects (myopathies). You should be prescribed a different statin depending on the potency desired. If lovastatin is warranted, then the dose should be limited to 20 mg per day or less.

Source: CPIC - A

Meloxicam

Mobic, Mobicox

Nonsteroidal Inflammatory Drugs (NSAIDs)

Mepivacaine

Carbocaine, Polocaine Dental

Local Anesthetics

Mercaptopurine

Purinethol, Purixan

Antineoplastic Agents

Response to medication may be impacted by gene: **TPMT & NUDT15**

Your prescriber should consider a dose reduction. The starting dose should be 30-80% of the normal dose and should be adjusted based on the degree of bone marrow suppression (myelosuppression) and disease-specific guidelines. They should allow 2-4 weeks after each dose adjustment, which is when this medication reaches a consistent level in your body. Consideration of a dose reduction may also depend on the starting dose that would normally be used.

Source: CPIC - A

Methadone

Metadol, Methadose

Opioids

Methotrexate

Jylamvo, Methofill Self-Dose Injector, Metoject, Otrexup, Rasuvo, Reditrex, Xatmep

Immunosuppressants

Methoxyflurane

Penthrox

General & Inhalational Anesthesia

Methylene blue

Provayblue

Methemoglobinemia Agent/Antidote

Metoclopramide

Gimoti, Reglan

Other

Response to medication may be impacted by gene: **CYP2D6**

You may have an increased risk of experiencing a higher concentration of medication in your body and an increased risk of side effects. Your prescriber should consider a lower dose.

Source: FDA

Metoprolol

Lopresor

Beta-Blockers

Response to medication may be impacted by gene: **CYP2D6**

You may have decreased ability to process this medication (decreased metabolism). Your prescriber should use smaller dose increases and/or prescribe no more that 25% of the standard dose for heart rate reduction or 50% for symptomatic bradycardia.

Source: PharmGKB - 2A

Mirabegron

Myrbetriq

Urinary Antispasmodic (Selective Beta 3-Adrenergic Agonists)

Response to medication may be impacted by gene: **CYP2D6**

You are at an increased risk of experiencing a higher concentration of medication in your body.

Source: FDA

Mirtazapine

Remeron

Antidepressants - Others

Response to medication may be impacted by gene: **CYP2D6**

You may eliminate this medication from your body at a decreased rate.

Source: PharmGKB - 2A

Modafinil

Alertec, PROVIGIL

Antidepressants - Others

Response to medication may be impacted by gene: **CYP2D6**

You may need dose modifications for medications if you are prescribed this medication.

Source: FDA

Nebivolol

Bystolic

Beta-Blockers

Response to medication may be impacted by gene: **CYP2D6**

You may be at an increased risk of experiencing a higher concentration of medication in your body.

Source: FDA

Nevirapine

Viramune

Antiretrovirals - NNRTI

Nilotinib

Tasigna

Antineoplastic Agents

Nitrofurantoin

MacroBID

Antibiotics

Nitroglycerin

Nitro-Dur, Nitrolingual Pumpspray, Nitrostat

Nitrates

Norelgestromin

Evra

Hormonal Contraceptives

Norfloxacin

Norfloxacin

Antibiotics

Nortriptyline

Aventyl, Pamelor

Antidepressants - Tricyclic

Response to medication may be impacted by gene: **CYP2D6**

You should avoid this medication due to potential side effects. Your prescriber should consider an alternative medication not processed (metabolized) by CYP2D6. If nortriptyline use is warranted, your prescriber should consider using one half (50%) of the recommended starting dose and should use blood tests specific to the medication to guide dose adjustments.

Source: CPIC - A

Ofloxacin

Ofloxacin

Antibiotics

Omeprazole

Losec, Prilosec

Proton-Pump Inhibitors (PPIs)

Response to medication may be impacted by gene: **CYP2C19**

Your prescriber should increase your starting dose by 100%. Your daily dose may be divided into multiple doses. You should be monitored for effectiveness.

Source: CPIC - A

Ondansetron

Zofran

Other

Ospemifene

Osphena

Selective Estrogen Receptor Modulators

Oxycodone

OxyNeo, Oxycontin, Percocet, Targin

Opioids

Response to medication may be impacted by gene: **CYP2D6**

You may have decreased ability to process this medication (decreased metabolism).

Source: PharmGKB - 2A

Pantoprazole

Pantoloc, Protonix, Tecta

Proton-Pump Inhibitors (PPIs)

Response to medication may be impacted by gene: **CYP2C19**

Your prescriber should increase your starting daily dose by 100%. Your daily dose may be divided into multiple doses. You should be monitored for effectiveness.

Source: CPIC - A

Paroxetine

Brisdelle, Paxil, Pexeva

Antidepressants - SSRI

Response to medication may be impacted by gene: **CYP2D6**

Your prescriber should select an alternative medication not predominantly processed (metabolized) by the enzyme CYP2D6 or, if paroxetine use is warranted, should consider a 50% reduction of the recommended starting dose and should gradually increase to dose to achieve benefit.

Source: CPIC - A

Pazopanib

Votrient

Antineoplastic Agents

Peginterferon alfa-2a

Pegasys

Antivirals

Response to medication may be impacted by gene: **IFNL3**

Peginterferon alfa-2a + ribavirin: You have approximately 30% chance of benefit after 48 weeks of treatment if taking this medication along with ribavirin. Peginterferon alfa-2a + ribavirin + protease inhibitor combinations: You have approximately 60% chance of benefit (after 24-48 weeks of treatment if taking this medication along with ribavirin and protease inhibitor combinations. Approximately 50% of individuals are eligible for shortened therapy regimens (24–28 weeks).

Source: CPIC - A

Perphenazine

Perphenazine

Psychotropics 1st Generation Antipsychotics

Response to medication may be impacted by gene: **CYP2D6**

You are at an increased risk of experiencing a higher concentration of medication in your body and an increased risk of side effects.

Source: FDA

Phenytoin

Dilantin

Anticonvulsants

Pimozide

Orap

Psychotropics 1st Generation Antipsychotics

Response to medication may be impacted by gene: **CYP2D6**

You are at an increased risk of experiencing a higher concentration of medication in your body. If you are an adult, you should not be prescribed more than 50% of the maximum dose or 10 mg/day for adults and 0.05 mg/kg to a maximum of 2mg/day for children under 12.

Source: DPWG

Piroxicam

Feldene

Nonsteroidal Inflammatory Drugs (NSAIDs)

Pitolisant

Wakix

H3 Receptor Antagonists

Response to medication may be impacted by gene: **CYP2D6**

Your prescriber should select a starting dose of 8.9 mg once daily and gradually increase dose to 17.8 mg once daily after 7 days.

Source: FDA

Pravastatin

Pravachol

Statins - HMG-COA Reductase Inhibitors

Response to medication may be impacted by gene: **SLCO1B1**

Your prescriber should select your starting dose and adjust based on disease-specific guidelines. Your prescriber should be aware of your increased risk of muscle-related side effects (myopathies) with pravastatin, particularly if the dose is >40 mg per day.

Source: CPIC - A

Prilocaine

Citanest, Emla

Local Anesthetics

Primaquine

Primaquine

Antimalarials

Propafenone

Rythmol

Antiarrhythmics

Response to medication may be impacted by gene: **CYP2D6**

You may have decreased ability to process this medication (decreased metabolism).

Source: PharmGKB-1A

Propranolol

Hemangeol, Hemangiol, Inderal-LA

Beta-Blockers

Response to medication may be impacted by gene: **CYP2D6**

You may have an increased amount of this medication in your body from a standard dose.

Source: FDA

Protriptyline

Protriptyline

Antidepressants - Tricyclic

Response to medication may be impacted by gene: **CYP2D6**

You may have an increased amount of this medication in your body from a standard dose.

Source: FDA

Quetiapine

Seroquel

Psychotropics 2nd Generation Antipsychotics

Quinine

Qualaquin

Antimalarials

Rabeprazole

Aciphex, Pariet

Proton-Pump Inhibitors (PPIs)

Rasburicase

Elitek, Fasturtec

Uricolytic Agent/Enzymes

Rifampin

Rimactane, Rofact

Antibiotics

Response to medication may be impacted by gene: **NAT2**

You may be at increased risk of side effects (toxicity) and increased amounts of this medication in your body from a standard dose.

Source: PharmGKB - 1B

Risperidone

Perseris, Risperdal

Psychotropics 2nd Generation Antipsychotics

Response to medication may be impacted by gene: **CYP2D6**

Your prescriber should select 67% of the standard dose. If problematic side effects affecting your central nervous system occur despite the dose reduction, your prescriber should reduce the dose to 50% of the standard dose.

Source: DPWG

Ropivacaine

Naropin

Local Anesthetics

Rosuvastatin

Crestor, Ezallor Sprinkle

Statins - HMG-COA Reductase Inhibitors

Response to medication may be impacted by gene: **SLCO1B1 & ABCG2**

Your prescriber should adjust your dose based on disease-specific guidelines and be aware of possible increased risk of side effects (myopathy) especially for >20mg dose.

Source: CPIC - A

Salmeterol

Advair, Serevent

Selective Beta 2-adrenergic Agonists (SABAs)

Sertraline

Zoloft

Antidepressants - SSRI

Sevoflurane

Sevorane, Ultane

General & Inhalational Anesthesia

Simvastatin

Zocor

Statins - HMG-COA Reductase Inhibitors

Response to medication may be impacted by gene: **SLCO1B1**

You may be at increased risk of muscle-related side effects (myopathies). You should be prescribed a different statin depending on the potency desired. If simvastatin is warranted, then the dose should be limited to less than 20 mg per day.

Source: CPIC - A

Siponimod

Mayzent

Immunomodulatory Agents

Succinylcholine

Anectine, Quelicin

Muscle Relaxant/Neuromuscular Blocker

Sulfadiazine

Flamazine, Silvadene

Antibiotics

Sulfamethoxazole and Trimethoprim

Septra

Antibiotics

Sulfasalazine

Azulfidine, Salazopyrin

Immunomodulatory Agents

Tacrolimus

Advagraf, Astagraf, Envarsus, Prograf

Immunosuppressants

Tamoxifen

Nolvadex-D, Soltamox

Antineoplastic Agents

Response to medication may be impacted by gene: **CYP2D6**

Your prescriber should consider alternative hormonal therapy, such as a medication in the "aromatase inhibitor" class if you are a postmenopausal woman, or, a medication in the aromatase inhibitor class, as well as ovarian function suppression approaches if you are a premenopausal woman. These treatment options are superior to use of tamoxifen, regardless of your genetics. Note that a higher tamoxifen dose (40 mg/day) increases the concentration of active medication in your body ("endoxifen") but does not result in normal concentrations. This option can be considered If there are strict warnings against use of an aromatase inhibitor.

Source: CPIC - A

Tamsulosin

Flomax, Jalyn

Selective Alfa-1-Adrenergic Blocking Agents

Response to medication may be impacted by gene: **CYP2D6**

This medication should only be prescribed with caution. You are at an increased risk of experiencing a higher concentration of medication in your body.

Source: FDA

Tetrabenazine

Nitoman, Xenazine

Monoamine Depleting Agent

Response to medication may be impacted by gene: **CYP2D6**

You are at an increased risk of experiencing a higher concentration of this medication in your body. The maximum recommended single dose is 25 mg, and your daily dose should not exceed 50 mg.

Source: FDA

Thioguanine

Lanvis

Antineoplastic Agents

Response to medication may be impacted by gene: **TPMT & NUDT15**

Your prescriber should consider a dose reduction. The starting dose should be 50-80% of the normal dose if normal starting dose is ≥40–60 mg/m2/day, and should be adjusted based on the degree of bone marrow suppression (myelosuppression) and disease-specific guidelines. They should allow 2-4 weeks after each dose adjustment, which is when this medication reaches a consistent level in your body. If myelosuppression occurs, and depending on other therapy emphasis should be given to reducing thioguanine over other medications.

Source: CPIC - A

Thioridazine

Thioridazine

Psychotropics 1st Generation Antipsychotics

Response to medication may be impacted by gene: **CYP2D6**

This medication should not be prescribed for you, due to the risk of serious side effects (Torsades de pointes) and/or sudden death.

Source: FDA

Tolterodine

Detrol

Antimuscarinics

Response to medication may be impacted by gene: **CYP2D6**

You may have decreased ability to process this medication (decreased metabolism).

Source: PharmGKB - 2A

Tramadol

Conzip, Durela, Qdolo, Ralivia, Seglentis, Tramacet, Tridural, Ultracet, Ultram, Zytram XL

Opioids

Response to medication may be impacted by gene: **CYP2D6**

This medication should not be prescribed for you, as its ability to reduce pain is diminished. If you require an opioid, your prescriber should consider avoiding codeine.

Source: CPIC

Trimipramine

Trimipramine

Antidepressants - Tricyclic

Response to medication may be impacted by gene: **CYP2D6 & CYP2C19**

You should not be prescribed this medication. If use is warranted, your prescriber should use blood tests specific to the medication to guide dose adjustments.

Source: CPIC - A

Venlafaxine

Effexor XR

Antidepressants - SNRI

Response to medication may be impacted by gene: **CYP2D6**

You may be an increased risk of side effects, and a decreased likelihood of effectiveness. Your prescriber should avoid selecting venlafaxine and consider an alternative antidepressant not predominantly metabolized by CYP2D6. Antidepressants that are not metabolised by CYP2D6 - or to a lesser extent - include, for example, duloxetine, mirtazapine, citalopram and sertraline.

Source: CPIC - A

Vitamin C

MoviPrep

Other

Voriconazole

Vfend

Antifungals

Response to medication may be impacted by gene: **CYP2C19**

Your prescriber should select an alternative medication not processed (metabolized) by the CYP2C19 enzyme as primary therapy in place of voriconazole. These alternative medications may include isavuconazole, liposomal amphotericin B, and posaconazole.

Source: CPIC - A

Vortioxetine

Trintellix

Antidepressants - Others

Response to medication may be impacted by gene: **CYP2D6**

Your prescriber should start this medication at 50% of starting dose (5 mg) and slowly adjust the dose to the maximum recommended dose of 10 mg or consider a clinically appropriate alternative antidepressant.

Source: CPIC - A

Warfarin

Coumadin

Antithrombotics

Response to medication may be impacted by gene: **VKORC1**

You may require a reduced dose of Warfarin due to reduced VKORC1 function. The best way to estimate the anticipated stable dose of warfarin is to use the algorithms available at http://www.warfarindosing.org.

Source: CPIC - A

Zuclopenthixol

Clopixol

Psychotropics 1st Generation Antipsychotics

Response to medication may be impacted by gene: **CYP2D6**

Your prescriber should prescribe 50% of the normal dose of this medication.

Source: DPWG