



# DNA Compatibility Report

PHYSICIANS REPORT FOR:  
JOHN W. DOE



# John W. Doe Pharmacogenetic Test Summary

## PATIENT INFORMATION SUMMARY PAGE

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This is a summary genetic report for your patient to share with other healthcare providers.

### PATIENT INFORMATION

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John W. Doe  
DOB: 07/16/73  
Requisition ID# A274GT9  
Patient SL3  
Test Date: 11/21/2017

### PHARMAZAM CONTACT INFO

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12902 Commodity Pl., Bldg 3,  
Tampa, FL, 33626  
Phone: 888-972-9331

### PHARMACOGENETIC TEST SUMMARY:

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CYP2C19	*1/*17	Rapid Metabolizer
CYP2C9	*1/*1	Normal Metabolizer
DYP2C11	*1/*31	Slow Metabolizer
MYP249	*1/*11	Normal Metabolizer
CYP2C19	*1/*17	Rapid Metabolizer
CYP2C9	*1/*1	Normal Metabolizer
DYP2C11	*1/*31	Slow Metabolizer
MYP249	*1/*11	Normal Metabolizer

## Drug to Drug Conflicts for John W. Doe

Reaction Level: ■ NO INTERACTIONS DETECTED ■ MINIMAL ■ MODERATE ■ SEVERE

Prescription Medications: Always review all results with physician! Over-the-Counter Medications: Always review all results with pharmacist or physician!  
All results assume that all relevant patient and third party information collected and organized is accurate and up-to-date.



### **DOXEPIN: SEVERE** Doxepin 50 Mg Capsule Conflicts With Phenelzinet

Concurrent use may result in a severe reaction including hyperpyrexia, convulsions, excitability, muscular rigidity, fluctuations in blood pressure, convulsions, grand mal seizures, coma, and death. Symptoms of serotonin syndrome may include tremor, agitation, diaphoresis, hyperreflexia, clonus, tachycardia, hyperthermia, and muscle rigidity.(30)



### **ADVIL: MODERATE** Advil 100 Mg Tablet Conflicts With Warfarin

Concurrent use of anticoagulants and NSAIDs may increase the risk for bleeding.



### **ADVIL: MINIMAL** Advil 100 Mg Tablet Conflicts With Plavix

Concurrent use of platelet aggregation inhibitors and NSAIDs may increase the risk of bleeding.



### **WARFARIN: NO INTERACTIONS DETECTED** Warfarin No Conflict With CYP2C9

Concurrent administration of fluoxetine or paroxetine with selected tricyclic antidepressants may result in an increase in serum levels, toxicities( e.g. risk for seizures or torsades de pointes), and/or clinical effects of the tricyclic agent. Concurrent administration of fluoxetine or paroxetine with clomipramine.



### **RISK FACTOR DETECTED:**

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### **PHARM D RECOMMENDATIONS:**

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**CURRENT MEDICATIONS:**

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Advil	07.11.2017
Clopidogrel	07.23.2017
Doxepin	09.04.2017
Fluoxetine	09.17.2017
Warfarin	10.27.2017

**CURRENT ILLNESSES:**

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Migraine Headaches	07.11.2017
Heart Disease	07.23.2017
Insomnia	09.04.2017
Depression	09.17.2017
Blood Clots	10.27.2017

**DRUG ALLERGIES:**

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Amoxicillin	05.17.2017
Tetracycline	06.22.2017
Lamotrigine	09.01.2017

**⚠ POTENTIAL MEDICATION ISSUES:**

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<b>DRUG:</b>	<b>GENERIC:</b>
Warfarin	Coumadin
Oxycontin	Oxycodone
Xanax	Alprazolam
Mucinex DM	

**FOOD:** Do you consume the following foods

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Soy:	Yes
Citrus:	Yes
Protein:	Yes
Fiber:	Yes
Chocolate:	No
Cheese:	No
Sour Cream:	No
Yogurt:	Yes
Fruit:	Yes
Egg:	Yes
Tofu:	No
Salmon:	No
Nuts:	Yes

**BEVERAGES:** Do you consume the following beverages

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Milk:	Yes
Soda:	No
Tea:	No
Coffee:	Yes

**LIFESTYLE:**

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Alcohol:	Yes
Smoking:	No
Are You Pregnant:	No
Are You Menopausal:	No
Are You Over 70:	No

## TEST DETAILS

Pharmazam tests over 9000 genes that have been associated to pharmacogenetics and 56 were found to have clinical evidence. The genes with clinical evidence are listed below.

Gene	Genotype	Phenotype
CYP1A2	*1/*1	Normal Metabolizer
CYP2D6	*1/*17	Ultra Rapid Metabolizer
CYP3A4	*1/*35	Intermediate Metabolizer
CYP2C19	*1/*1B	Normal Metabolizer
CYP3A45	*1/*1F	Normal Metabolizer
COMT	Val158Met G/G	Extensive Metabolizer
UGT1A1	*1/*3	Normal Metabolizer

## GUIDANCE LEVELS



**SEVERE** - Based upon the patient's genotype, a medication has potentially reduced efficacy or increased toxicity or the patient has an increased risk for the indicated condition.



**MODERATE** - Based upon the patient's genotype, guidelines exist for adjusting dosage, increased vigilance, or the patient has a moderate risk for the indicated condition.



**MINIMAL** - Based upon the patient's genotype, there is a very slight concern for the medication and should be reviewed by a physician prior to using.



**NO INTERACTIONS DETECTED** - Based upon the patient's genotype, the medication can be prescribed according to standard regimen or the patient's risk for the indicated condition is not increased.

## EVIDENCE LEVELS

### Actionable

Recommendations based upon publications by international pharmacogenetics expert groups, consortia or regulatory bodies (CPIC, DPWG, FDA, EMA). Recommendations are suitable for implementation in a clinical setting. Guidelines may change as new knowledge arises.

### Informative

There are insufficient or contradictory findings documenting the impact of a given genetic polymorphism or drug interaction. Recommendations are informative and implementation in a clinical setting is optional.

## Drug to Gene Conflicts for John W. Doe

Reaction Level: ■ NO INTERACTIONS DETECTED ■ MINIMAL ■ MODERATE ■ SEVERE

Prescription Medications: Always review all results with physician! Over-the-Counter Medications: Always review all results with pharmacist or physician!  
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**CLOPIDOGREL: SEVERE** Doxepin conflict with CYP2D6



**DOXEPIN: MINIMAL** Doxepin Conflict With CYP2D6

Doxepin can be prescribed at standard label-recommended dosage and administration. Normal Sensitivity to Doxepin



**RISK FACTOR DETECTED:**

Only for Doxepin.

**PHARM D RECOMMENDATIONS:**

Avoid tricyclic use due to potential lack of efficacy, consider alternative drug not metabolized by CYP2D6 like Trazodone. If use is warranted, titrate to a higher target dose and monitor levels to guide dose adjustment.

## Drug to Drug Conflicts for John W. Doe

Reaction Level: ■ NO INTERACTIONS DETECTED ■ MINIMAL ■ MODERATE ■ SEVERE

Prescription Medications: Always review all results with physician! Over-the-Counter Medications: Always review all results with pharmacist or physician!  
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### IBUPROFEN AND WARFARIN: SEVERE



#### RISK FACTOR DETECTED:

Nonsteroidal anti-inflammatory drugs (NSAIDs) can potentiate the hypoprothrombinemic effect and bleeding risk associated with oral anticoagulants. Many NSAIDs can also alter the pharmacokinetics of warfarin and other oral anticoagulants, therefore resulting in increased INR or prothrombin time.

#### PHARM D RECOMMENDATIONS:

NSAIDs should be given with an oral anticoagulant only in cases where benefit outweighs risk. The INR should be checked frequently, and oral anticoagulant dose adjusted accordingly specially following initiation and discontinuation of NSAIDs. Patients (particularly elderly or debilitated patients) should also be educated on the importance of reporting any signs and symptoms of bleeding.



### WARFARIN AND CLOPIDOGREL: SEVERE



#### RISK FACTOR DETECTED:

Concomitant use of both drugs may increase the risk of bleeding.

#### PHARM D RECOMMENDATIONS:

If the use of the combination is warranted, caution and close monitoring of the INR and other bleeding parameters are recommended. Patients should be advised to report signs of bleeding to their physician including pain, swelling, headache, dizziness, weakness, prolonged bleeding from cuts, nosebleeds, red or brown urine, or black stools.



### DOXEPIN AND FLUOXETINE: SEVERE



#### RISK FACTOR DETECTED:

Nonsteroidal anti-inflammatory drugs (NSAIDs) can potentiate the hypoprothrombinemic effect and bleeding risk associated with oral anticoagulants. Many NSAIDs can also alter the pharmacokinetics of warfarin and other oral anticoagulants, therefore resulting in increased INR or prothrombin time.

#### PHARM D RECOMMENDATIONS:

NSAIDs should be given with an oral anticoagulant only in cases where benefit outweighs risk. The INR should be checked frequently, and oral anticoagulant dose adjusted accordingly specially following initiation and discontinuation of NSAIDs. Patients (particularly elderly or debilitated patients) should also be educated on the importance of reporting any signs and symptoms of bleeding.



### FLUOXETINE AND CLOPIDOGREL: SEVERE



#### RISK FACTOR DETECTED:

Coadministration of potent inhibitors of CYP2C19 may reduce the efficacy of clopidogrel whose antiplatelet effect is dependent on bioactivation of CYP2C19 enzyme. This combination should preferably be avoided.

## Drug to Illness Conflicts for John W. Doe

Reaction Level: ■ NO INTERACTIONS DETECTED ■ MINIMAL ■ MODERATE ■ SEVERE

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### **WARFARIN: SEVERE** Warfarin 10 Mg Tablet Conflicts With Hemorrhage



### **ADVIL: MINIMAL** Advil 100 Mg Tablet Conflicts With Thrombosis

This patient has thrombosis on their illness list. Patients with thrombosis should be carefully evaluated before initiating therapy and monitored closely while taking advil 100 mg tablet.



### **RISK FACTOR DETECTED:**

1. Alcohol can increase the nervous system side effects of Fluoxetine and doxepin such as dizziness, drowsiness and difficulty concentrating. It can also lead to enhanced hypoprothrombinemic response to warfarin and therefore increase risk of bleeding.
2. Intake of citrus especially grapefruit juice can interfere with metabolism of clopidogrel and warfarin.
3. Intake of vitamin K which is a cofactor in the synthesis of blood clotting factors (that are being inhibited by oral anticoagulants) can reverse the action of oral anticoagulants. Resistance to oral anticoagulants has been associated with consumption of foods high in vitamin K content.
4. Nonsteroidal anti-inflammatory drugs (NSAIDs) can potentiate the hypoprothrombinemic effect and bleeding risk associated with oral anticoagulants. Many NSAIDs can also alter the pharmacokinetics of warfarin and other oral anticoagulants, therefore resulting in increased INR or prothrombin time.

### **PHARM D RECOMMENDATIONS:**

1. Avoid or limit use of alcohol while being treated with Fluoxetine, doxepin and warfarin.
2. Avoid grapefruit juice while taking Warfarin and clopidogrel.
3. Monitor the intake of vitamin K while on warfarin therapy. Vitamin K antagonizes the effects of warfarin. Consumption of foods high in vitamin K such as dark leafy greens should be kept consistent during the week.
4. It is also important to avoid or limit the consumption of cranberry juice, pomegranate juice, black currant juice and black currant seed oil as these have been shown to increase the risk of bleeding or bruising if used in combination with oral anticoagulants.
5. NSAIDs should be given with an oral anticoagulant only in cases where benefit outweighs risk. The INR should be checked frequently, and oral anticoagulant dose adjusted accordingly specially following initiation and discontinuation of NSAIDs. Patients (particularly elderly or debilitated patients) should also be educated on the importance of reporting any signs and symptoms of bleeding.

## Drug to Lifestyle Conflicts for John W. Doe

Reaction Level:  NO INTERACTIONS DETECTED  MINIMAL  MODERATE  SEVERE

Prescription Medications: Always review all results with physician! Over-the-Counter Medications: Always review all results with pharmacist or physician!  
All results assume that all relevant patient and third party information collected and organized is accurate and up-to-date.

 **XANAX: SEVERE** Xanax 1 Mg Tablet Conflicts With Alcohol

Concurrent use of benzodiazepines and alcohol-containing products may result in enhanced disruption of psychomotor performance and increased central nervous system depression.

 **WARFARIN: MODERATE** Warfarin 10 Mg Tablet Conflicts With Food

Alterations in the amount of vitamin K in the diet may alter the patient's response to coumarin anticoagulants.

 **PLAVIX: MINIMAL** Plavix 75 Mg Tablet Conflicts With Citrus

Consumption of grapefruit juice may decrease formation of the active clopidogrel metabolite and decrease clopidogrel efficacy.(1)

 **PLAVIX: NO INTERACTIONS DETECTED** Plavix 75 Mg Tablet Conflicts With Fruit

Consumption of grapefruit juice may decrease formation of the active clopidogrel metabolite and decrease clopidogrel efficacy.(1)

 **RISK FACTOR DETECTED:**  
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**PHARM D RECOMMENDATIONS:**  
Need content here.