

Sep 20, 2019

Dear Medical Professional,

**Re: Store1 Custo1**

Your patient has elected to receive more information about their pharmacogenetic profile. The Pillcheck™ test has been provided by Sagene Medical Genetics Laboratory and a customized report has been generated outlining current and future considerations for management of medication therapy where applicable.

**Background information on the Personal Medicine Profile test:**

- The Pillcheck™ is a pharmacogenetic test that predicts response to 179 medications based on a specific persons genetic variations.
- Genetic testing for these medications is recommended by the US Food and Drug Administration (FDA)/Dutch PGx Working Group/Health Canada
- The Pillcheck™ follows drug dosage guidelines from the International Clinical Pharmacogenetic Implementation Consortium (CPIC)/FDA drug monographs/Dutch PGx Working Group Guidelines. See <https://cpicpgx.org> for more details.
- For more information about Pillcheck™, please see [www.sagene.ir](http://www.sagene.ir) or contact us directly with questions at [info@sagene.ir](mailto:info@sagene.ir)

Below are some relevant report findings and recommendations for your information and discussion with your patient.

We are providing a pharmacogenetic review of the Pillcheck™ results in the context of your patient's Pillcheck™ test and the medical information provided by the patient. It is an overview and should always be used in consultation with the patient's medical care provider team.

This letter is for reference purposes only and is intended to be used as a resource. This information does not create a geneticist-patient relationship and should not be used as a substitute for professional diagnosis and treatment by a doctor.

**Pharmacogenetic implications for cardiovascular:**

Biomarker	Function	Summary
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Biomarker	Function	Summary
CYP3A5	Normal metabolizer	The majority of Caucasians do not express the CYP3A5 enzyme. As such, CYP3A5 normal metabolizers may have significantly increased clearance of cilostazol, which can result in lower clinical response at usual doses. Suggest increased monitoring for possible decreased efficacy.
CYP2D6	Ultrarapid metabolizer	Increased metabolism of metoprolol, suggest alternative drug (e.g. bisoprolol) or titrate dose to a maximum of 250% of the normal dose and monitor clinical response. Possible decreased response to anti-arrhythmic drugs including flecainide and propafenone and timolol; consider use of an alternate anti-arrhythmic drug (sotalol, disopyramide, amiodarone) or monitor treatment efficacy.
CYP2C9	Normal metabolizer	Normal metabolism of acenocoumarol and warfarin is anticipated. For starting warfarin and acenocoumarol dose guidance and VKORC1 status refer to full PGx report. Normal metabolism of irbesartan and losartan is also anticipated.
VKORC1	Normal Vitamin K	Normal Vitamin K levels. For starting warfarin and acenocoumarol dose guidance and CYP2C9 status refer to full PGx report.
CYP3A4	Normal metabolizer	Normal drug metabolism for apixaban and rivaroxaban is anticipated. Normal clearance of sildenafil, tadalafil, vardenafil, amlodipine and dronedarone is anticipated.
SLCO1B1	Normal activity	Normal response to statins anticipated.
CYP2C19	Ultrarapid metabolizer	Significantly increased platelet inhibition and clopidogrel response resulting in possible increased risk of bleeding complications. Usual doses of clopidogrel can be used, however, consider closer monitoring of possible bleeding risks.




Geneticist Signature




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## Treatment Areas

Medicine	 <b>Use with increased caution - consider alternatives</b>	 <b>Use with caution - more frequent monitoring</b>	 <b>Use as directed - standard precaution</b>
<b>Analgesics</b>	Codeine Hydrocodone Oxycodone Tramadol and acetaminophen	Ketamine Methadone	Celecoxib Diclofenac Fentanyl Flurbiprofen Hydromorphone Morphine Naloxone Naltrexone Piroxicam
<b>Antibacterial</b>			Telithromycin
<b>Antiemetics</b>		Dolasetron Ondansetron Palonosetron Tropisetron	Aprepitant Dronabinol Fosaprepitant
<b>Antifungals</b>	Voriconazole	Terbinafine	Itraconazole
<b>Antiviral</b>		Efavirenz Nevirapine	Atazanavir Boceprevir Daclatasvir Dolutegravir Elbasvir and grazoprevir Fosamprenavir Ledipasvir and sofosbuvir Ombitasvir, paritaprevir and ritonavir Peginterferon Alpha-2b Simeprevir Sofosbuvir Sofosbuvir and velpatasvir Telaprevir

Medicine	 Use with increased caution - consider alternatives	 Use with caution - more frequent monitoring	 Use as directed - standard precaution
<b>Cardiovascular</b>	Cilostazol Metoprolol	Carvedilol Flecainide Irbesartan Nebivolol Propafenone Propranolol Quinidine Ranolazine Timolol	Alirocumab Amlodipine Atorvastatin Clopidogrel Dronedarone Evolocumab Fluvastatin Losartan Lovastatin Pitavastatin Prasugrel Pravastatin Rosuvastatin Sildenafil Simvastatin Tadalafil Ticagrelor Vardenafil
<b>Dermatology and Dental</b>		Cevimeline	
<b>Endocrinology</b>	Eliglustat		
<b>Gastroenterology</b>	Esomeprazole Lansoprazole Omeprazole Pantoprazole	Dexlansoprazole Rabeprazole	
<b>Gynecology</b>			Desogestrel Ethinylestradiol
<b>Hematology</b>			Acenocoumarol Apixaban Phenprocoumon Rivaroxaban Warfarin
<b>Immune therapy</b>	Cyclosporine Sirolimus Tacrolimus		Methotrexate
<b>Musculoskeletal</b>		Carisoprodol	

Medicine	 Use with increased caution - consider alternatives	 Use with caution - more frequent monitoring	 Use as directed - standard precaution
<b>Neurology</b>  Brivaracetam Midazolam		Caffeine Clobazam Deutetrabenazine Dextromethorphan and quinidine Donepezil Galantamine Lacosamide Rasagiline Tetrabenazine Valbenazine	Fosphenytoin Phenytoin Valproic acid / divalproex
<b>Oncology</b>		Gefitinib Tamoxifen	Belinostat Cabazitaxel Capecitabine Cisplatin Enzalutamide Erlotinib Fluorouracil Irinotecan Mercaptopurine Nilotinib Pazopanib Tegafur Thioguanine
<b>Other</b>		Flibanserin	

Medicine	 Use with increased caution - consider alternatives	 Use with caution - more frequent monitoring	 Use as directed - standard precaution
<b>Psychiatry</b>	Alprazolam Amitriptyline Chlordiazepoxide and amitriptyline Citalopram Clomipramine Desipramine Doxepin Escitalopram Imipramine Nortriptyline Protriptyline Quetiapine Trimipramine	Amphetamine Aripiprazole Atomoxetine Brexpiprazole Bupropion Chlorpromazine Clozapine Diazepam Duloxetine Fluoxetine Fluoxetine and olanzapine Fluvoxamine Haloperidol Iloperidone Mirtazapine Modafinil Nefazodone Olanzapine Paroxetine Perphenazine Pimozide Risperidone Sertraline Thioridazine Thiothixene Venlafaxine Vortioxetine Zuclopenthixol	Buprenorphine Clonazepam Eszopiclone Guanfacine Lorazepam Lurasidone Oxazepam Trazodone Zopiclone
<b>Pulmonary</b>			Indacaterol Salmeterol
<b>Rheumatology</b>			Azathioprine Lesinurad
<b>Urology</b>		Darifenacin Fesoterodine Tamsulosin Tolterodine	