

Supplementary Materials: Effectiveness of a Pharmacogenetic Tool at Improving Treatment Efficacy in Major Depressive Disorder: A Meta-Analysis of Three Clinical Studies

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Table S1. List of genes and polymorphisms analyzed.

Gene symbol	Gene name	Polymorphisms
<i>ABCB1</i>	ATP binding cassette subfamily B member 1	rs2235048, rs11983225
<i>AKT1</i>	V-akt murine thymoma viral oncogene homolog 1	rs1130214
<i>BDNF</i>	Brain-derived neurotrophic factor	rs6265
<i>CACNG2</i>	Calcium channel, voltage-dependent, gamma subunit 2	rs2284017
<i>CES1</i>	Carboxylesterase 1	rs71647871
<i>COMT</i>	Catechol-O-methyltransferase	rs4680
<i>CRHR1</i>	Corticotropin releasing hormone receptor 1	rs4792888
<i>CYP1A2</i>	Cytochrome P450 family 1 subfamily A member 2	*1, *1F
<i>CYP2B6</i>	Cytochrome P450 family 2 subfamily B member 6	*1, *6
<i>CYP2C19</i>	Cytochrome P450 family 2 subfamily C member 19	*1, *2, *3, *5, *7, *8, *17, *27
<i>CYP2C9</i>	Cytochrome P450 family 2 subfamily C member 9	*1, *2, *3, *6, *8, *27
<i>CYP2D6</i>	Cytochrome P450 family 2 subfamily D member 6	*1, *2, *3, *4, *5, *6, *7, *8, *9, *10, *11, *12, *14, *15, *17, *19, *20, *29, *30, *35, *40, *41, *69, *1xN, *2xN, *35X2
<i>CYP3A4</i>	Cytochrome P450 family 3 subfamily A member 4	*1, *22
<i>DDIT4</i>	DNA damage inducible transcript 4	rs1053639
<i>DRD3</i>	Dopamine receptor D3	rs963468
<i>EPHX1</i>	Epoxide hydrolase 1, microsomal (xenobiotic)	rs1051740
<i>FCHSD1</i>	FCH and double SH3 domains 1	rs456998
<i>GRIK2</i>	glutamate receptor, ionotropic, kainate 2	rs2518224
<i>GRIK4</i>	glutamate receptor, ionotropic kainate 4	rs1954787
<i>HLA-A</i>	Major histocompatibility complex, class I, A	rs1061235
<i>HTR1A</i>	5-HT (serotonin) receptor 1A, G protein-coupled	rs10042486
<i>HTR2A</i>	5-HT (serotonin) receptor 2A, G protein-coupled	rs6311, rs6314, rs9316233
<i>HTR2C</i>	5-HT (serotonin) receptor 2C, G protein-coupled	rs1414334
<i>LPHN3</i>	Latrophilin 3	rs6551665
<i>NEFM</i>	Neurofilament, medium polypeptide	rs1379357, rs1457266
<i>OPRM1</i>	Opioid receptor, mu 1	rs1799971
<i>RGS4</i>	Regulator of G-protein signaling 4	rs2661319
<i>RPTOR</i>	Regulatory associated protein of MTOR, complex 1	rs7211818
<i>SLC6A4</i>	Solute carrier family 6 (neurotransmitter transporter), member 4	5-HTTLPR
<i>UGT2B15</i>	UDP glucuronosyltransferase 2 family, polypeptide B15	rs1902023

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Results Report NFGE

Requested by Dr: [redacted] Request date: 05/21/2015
 Sample Code: [redacted] Analysis #: [redacted] Entry date: 05/22/2015

1. Genetic results | **2. Patient information** | **3. Final result**
 Patient genetics+info

Results in table format View as list

An initial interpretation of the results obtained from the patients genetic profile is displayed in a table below. For each drug examined, the result is indicated according to the following code:

Standard ▶ No genetic variants relevant to the treatment have been found.	 ▶ Need for drug dose monitoring and/or less likelihood of positive response.
 ▶ Increased likelihood of positive response and/or lower risk of adverse drug reactions.	 ▶ Increased risk of adverse drug reactions.

Antidepressants					
Amitriptyline		Bupropion	Standard	Citalopram	
Clomipramine		Desipramine		Doxepine	
Duloxetine		Escitalopram		Fluoxetine	
Fluvoxamine		Imipramine		Mianserin	
Mirtazapine		Nortriptyline		Paroxetine	
Sertraline	Standard	Trimipramine		Venlafaxine	

Antipsychotics					
Aripiprazole		Clozapine		Haloperidol	
Olanzapine		Paliperidone		Perphenazine	
Pimozide		Quetiapine	Standard	Risperidone	
Thioridazine		Ziprasidone	Standard	Zuclopentixol	

Stabilizers and anticonvulsants					
Carbamazepine		Clobazam		Clonazepam	
Lamotrigine		Levetiracetam		Lithium*	Standard
Lorazepam	Standard	Oxcarbazepine		Phenobarbital	
Phenytoin		Pregabalin	Standard	Topiramate	
Valproic Acid		Vigabatrin			

Others					
Atomoxetine		Methadone	Standard	Methylphenidate	
Naloxone	Standard	Naltrexone	Standard	Pramipexol	Standard

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Antidepressants					
Amitriptyline		Bupropion	Standard	Citalopram	
Clomipramine		Desipramine		Citalopram	
Duloxetine		Escitalopram			
Fluvoxamine		Imipramine			
Mirtazapine		Nortriptyline			
Sertraline	Standard	Trimipramine			

Analysis result

- Higher likelihood of positive response to treatment (ABCB1)
- Slight increase in the likelihood of positive response (GRIK4)

Recommendation

The analysis indicates the presence of factors associated with a higher likelihood of positive response to treatment (ABCB1, GRIK4), and therefore, if applicable, use of this drug is recommended in preference to other similar alternatives.

Figure S1. Example of a Neuropharmagen® pharmacogenomics interpretative report for one de-identified study subject, showing (a) the color-coding classification of drugs and (b) detailed information for one of the drugs.