DEMO DEMO

BIOGENIQ

Sample number	BIO-DEMO	**Report date**	2018-11-23
Date of birth	1990-02-02	**Specimen**	Saliva
Sex	Male		
Pharma Profile(s)	ADHD		

Pharmacogenetic report

For more information, contact us:

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The Pharma profile is a clinical decision support tool aimed at reducing the risks of adverse drugs reactions and therapeutic failure. The Pharma profile does not replace existing prescription guides. Response to medication can be influenced by factors not evaluated in this report. Response to treatment may be different than predicted in this report. The Pharma profile does not diagnose any disorder, condition or disease.

Alpha 2 - adrenergic agonist

- (!) **Clonidine** (CATAPRES®, DIXARIT®)
- **Guanfacine** (INTUNIV XR®)

Antipsychotic

- (!) **Risperidone** (RISPERDAL®)

Atypical antidepressant

- **Bupropion** (WELLBUTRIN®, ZYBAN®)

Noradrenaline reuptake inhibitor

- (!) **Atomoxetine** (STRATTERA®)

Psychostimulant

- (!) **Amphetamine** (ADDERALL XR®)
- (!) **Dextroamphetamine** (DEXEDRINE®)
- (!) **Lisdexamfetamine** (VYVANSE®)
- ⚠ **Methylphenidate** (BIPHENTIN®)
- ⚠ **Methylphenidate** (CONCERTA®)
- ⚠ **Methylphenidate** (RITALIN®)

Legend: (!) Increased risk of adverse drug reactions ⚠ Increased risk of therapeutic failure

PHARMACOGENETIC RECOMMENDATIONS

(!) **Amphetamine** (ADDERALL XR®) GENE: ***CYP2D6*** LEVEL OF EVIDENCE: **4**

Increased risk of adverse drug reactions with standard dosing of amphetamine

Your body may metabolize and eliminate amphetamine at a slower rate than expected. Therefore, a standard dose of amphetamine may be too high and could lead to unwanted side effects.

- Insufficient data to allow calculation of dose adjustment.
- Be aware of adverse drug reactions.

(!) **Atomoxetine** (STRATTERA®) GENE: ***CYP2D6*** LEVEL OF EVIDENCE: **1**

Increased risk of adverse drug reactions with standard dosing of atomoxetine

Your body may metabolize and eliminate atomoxetine at a slower rate than expected.

- Be alert to unwanted side effects (e.g., insomnia, weight loss, constipation, tremors).
- Consult your healthcare provider to optimize your therapy.

Bupropion (WELLBUTRIN®, ZYBAN®) GENES: ***CYP2B6, POR*** LEVEL OF EVIDENCE: **3**

No genetic variation identified that would prompt changes to bupropion therapy

Your body should metabolize and eliminate bupropion normally. Therefore, your genetic results do not suggest any change to bupropion therapy.

- No change to the recommended dose.

(!) **Clonidine** (CATAPRES®, DIXARIT®) GENE: ***CYP2D6*** LEVEL OF EVIDENCE: **4**

Increased risk of adverse drug reactions with standard dosing of clonidine

Your body may metabolize and eliminate clonidine at a slower rate than expected.

- Be alert to adverse drug reactions.
- Consult your healthcare provider to optimize your therapy.

(!) **Dextroamphetamine** (DEXEDRINE®) GENE: ***CYP2D6*** LEVEL OF EVIDENCE: **4**

Increased risk of adverse drug reactions with standard dosing of dextroamphetamine

Your body may metabolize and eliminate dextroamphetamine at a slower rate than expected.

- Be aware of adverse drug reactions.
- Consult your healthcare provider to optimize your therapy.

Guanfacine (INTUNIV XR®) GENE: ***CYP3A4*** LEVEL OF EVIDENCE: **4**

No genetic variation identified that would prompt changes to guanfacine therapy

Your body should metabolize and eliminate guanfacine normally. Therefore, your genetic results do not suggest any change to guanfacine therapy.

- No change to the recommended dose.

Legend: (!) Increased risk of adverse drug reactions ⚠ Increased risk of therapeutic failure

(!) Lisdexamfetamine (VYVANSE®)

GENE: ***CYP2D6*** LEVEL OF EVIDENCE: **4**

Increased risk of adverse drug reactions with standard dosing of lisdexamfetamine

Your body may metabolize and eliminate lisdexamfetamine at a slower rate than expected.

- Be aware of adverse drug reactions.
- Consult your healthcare provider to optimize your therapy.

⚠ Methylphenidate (BIPHENTIN®)

GENES: ***CES1, LPHN3, TH*** LEVEL OF EVIDENCE: **3**

increased risk of nonresponse due to reduced effectiveness

The presence of mutations on the gene TH is associated with an increased risk of nonresponse. This risk of nonresponse is exacerbated with prenatal smoking.

- Be alert for insufficient response.
- Consult your healthcare provider to optimize your therapy.

⚠ Methylphenidate (CONCERTA®)

GENES: ***CES1, LPHN3, TH*** LEVEL OF EVIDENCE: **3**

increased risk of nonresponse

The presence of mutations on the gene TH is associated with an increased risk of nonresponse. This risk of nonresponse is exacerbated with prenatal smoking.

- Be alert to insufficient response.
- Consult your healthcare provider to optimize your therapy.

⚠ Methylphenidate (RITALIN®)

GENES: ***CES1, LPHN3, TH*** LEVEL OF EVIDENCE: **3**

increased risk of nonresponse due to reduced effectiveness

The presence of mutations on the gene TH is associated with an increased risk of nonresponse. This risk of nonresponse is exacerbated with prenatal smoking.

- Be alert to insufficient response.
- Consult your healthcare provider to optimize your therapy.

(!) Risperidone (RISPERDAL®)

GENE: ***CYP2D6*** LEVEL OF EVIDENCE: **1**

risk of adverse drug reactions due to deficient metabolism

The elimination of risperidone is largely dependent on the CYP2D6 enzyme; based on this genetic analysis, your CYP2D6 enzyme has very limited function. Therefore, a conventional dosage of risperidone may be too high, which could lead to unwanted side effects.

Legend: (!) Increased risk of adverse drug reactions ⚠ Increased risk of therapeutic failure

RESULTS

GENES	TESTED ALLELES	GENOTYPES	PHENOTYPES
CES1	rs71647871	CC	Normal metabolizer
CYP2B6	*1, *4, *6, *18	*1/*1	Normal metabolizer
CYP2D6	*1, *2, *3, *4, *5, *6, *7, *8, *9, *10, *11, *12, *14, *15, *17, *19, *41, *69, CNV	*4/*5	Poor metabolizer
CYP3A4	*1, *2, *17, *22	*1/*1	Normal metabolizer
LPHN3	rs6551665 | rs1947274 | rs6858066	GG | CC | AG	-
POR	rs2868177	GG	Normal metabolizer
TH	rs2070762	CC	-

CES1: Carboxylesterase 1; CYP2B6: Cytochrome P450 2B6; CYP2D6: Cytochrome P450 2D6; CYP3A4: Cytochrome P450 3A4; LPHN3: Latrophilin 3; POR: Cytochrome P450 oxidoreductase; TH: Tyrosine Hydroxylase

Levels of evidence

1 - Recommendation based on pharmacogenetic information on the drug label approved by Health Canada and/or the US Food and Drug Administration (FDA). A level 1 will also be attributed if the recommendation originates from a clinical guideline published by the Clinical Pharmacogenetics Implementation Consortium (CPIC) or the Dutch Pharmacogenomics Working Group (DPWG).

2 - Recommendation based on the results of multiple studies showing a statistically significant effect of a genetic variant on drug response.

3 - Recommendation based on the results of a single study showing a statistically significant effect of a genetic variant on drug response and/or drug pharmacokinetics.

4 - Recommendation based only on knowledge of the principal metabolizing enzyme without in vivo or in vitro data demonstrating the impact that genetic variability has on drug response or pharmacokinetics.