

PATIENT		PHYSICIAN	
Name :	<input type="text"/>	Name :	<input type="text"/>
Gender :	<input type="text"/>	Date of Birth :	<input type="text"/>
		Institute :	<input type="text"/>

SAMPLE			
Sample Type :	<input type="text"/>	Sample Collection Date :	<input type="text"/>
Report Date :	<input type="text"/>	Sample ID :	<input type="text"/>

ACE-inhibitor

Drug	Recommended	Response	Gene – Genotype
Perindopril	✗	Poor, Adverse event – MI, Stroke	AGTR1 – AA
Quinapril	✗	Poor	AGT – AG
Captopril	✓✓	Better	AGTR1 – AA
Benazepril	✓	Typical	AGT – AG

Angiotensin Receptor Blockers (ARBs)

Drug	Recommended	Response	Gene – Genotype
Candesartan	✓✓	Better	AGTR1 – AA

Antiarrhythmics

Drug	Recommended	Response	Gene – Genotype
Amiodarone	✓	Typical	NOS1AP- CC

Anticoagulants

Drug	Recommended	Response	Gene – Genotype
Warfarin	✓	Typical	VKORC1 – CC
Acenocoumarol, Phenprocoumon	✓	Typical (High dose suggested)	VKORC1 – CC

Antihypertensives

Drug	Recommended	Response	Gene – Genotype
Atenolol	✗	Poor	CACNA1C – AA
Verapamil	✓✓	Better	CACNA1C – AA

Atypical Antipsychotics

Drug	Recommended	Response	Gene – Genotype
lloperidone	✗	Poor, Adverse event – MI, Stroke	NRG3 – GG

Beta Blockers

Drug	Recommended	Response	Gene – Genotype
Carvedilol	✗	Poor	ADRB2 – CG

Positive Biosciences Ltd.

Corporate Office: 1st Floor Kohinoor City Mall, Gate No. 1, Kiroi Road, Kurla West, Mumbai, Maharashtra, India 400070
 Toll Free: 1800 3070 6727 Website: www.positivebioscience.com Email: info@positivebioscience.com

Biguanides

Drug	Recommended	Response	Gene – Genotype
Metformin	✓	Typical	MATE2- GG

Calcium channel blockers

Drug	Recommended	Response	Gene – Genotype
Amlodipine	✗	Poor	NPPA - AG

Catecholamines

Drug	Recommended	Response	Gene – Genotype
Catecholamines	✓	Typical (Low dose suggested)	ADRB1 – CG

Cholesteryl Ester Transfer Protein Inhibitor

Drug	Recommended	Response	Gene – Genotype
Dalcetrapib	✓	Typical	ADCY9 - AG

Diuretics

Drug	Recommended	Response	Gene – Genotype
Chlorthalidone	✓ ✓	Better	NPPA - AG

DPP-4 inhibitors

Drug	Recommended	Response	Gene – Genotype
Sitagliptin	✓ ✓	Better	GLP1R – GG
Vildagliptin	✓ ✓	Better	GLP1R – GG
Linagliptin	✓ ✓	Better	TCF7L2 – AC

Fibrate

Drug	Recommended	Response	Gene – Genotype
Fenofibrate	✓ ✓	Better	APOA5 - CG

Hormone

Drug	Recommended	Response	Gene – Genotype
Insulin	✗	Poor	TCF7L2 - AC

Immunosuppressants

Drug	Recommended	Response	Gene – Genotype
Tacrolimus	✗	Poor, Adverse event – Hyperlipidemia	CYP3A5 – GG

Meglitinides

Drug	Recommended	Response	Gene – Genotype
Repaglinide	✓ ✓	Better	GG - 1DORLEH
Nateglinide	⚠	Caution; Typical risk of AE	CYP2C9*1/*1

Nonsteroidal Anti-inflammatory Drugs

Drug	Recommended	Response	Gene – Genotype
Aspirin	✓	Typical	PTGS1 – AA

Platelet Aggregation Inhibitors

Drug	Recommended	Response	Gene – Genotype
Clopidogrel	✗	Poor, Adverse event – MI, Stroke	CYP2C19*1/*2
Prasugrel	✓	Typical	CYP2C19 – GG
Ticagrelor	✗	Poor	SLCO1B1 – AA

PPARG- agonist

Drug	Recommended	Response	Gene – Genotype
Muraglitazar	⚠	Caution; Typical risk of Edema	REN – CC

Statins

Drug	Recommended	Response	Gene – Genotype
Pravastatin	✓	Typical	NPC1L1 – AA
Atorvastatin	✓	Typical	APOE – CC
Rosuvastatin	✓	Typical	SLCO1B1 – AA
Fluvastatin	✓ ✓	Better	ABCB1 – AA
Lovastatin	✓ ✓	Better	CYP3A5 – CC
Simvastatin	⚠	Caution; Typical risk of AE	SLCO1B1 – AA

Sulfonylureas

Drug	Recommended	Response	Gene – Genotype
Gliclazide	✓ ✓	Typical; Gliclazide + Metformin	KCNJ11 – GG
Glipizide	✓	Typical	CYP2C9*1/*1
Glimepiride	✗	Poor	CYP2C9*1/*1
Glibenclamide	⚠	Caution; Typical risk of AE	G6PD – GG

Positive Biosciences Ltd.

Corporate Office: 1st Floor Kohinoor City Mall, Gate No. 1, Kirod Road, Kurla West, Mumbai, Maharashtra, India 400070
 Toll Free: 1800 3070 6727 Website: www.positivebioscience.com Email: info@positivebioscience.com

Thiazolidinediones

Drug	Recommended	Response	Gene – Genotype
Troglitazone	✘	Poor	CDKN2A/2B - AA
Rosiglitazone	✘	Poor	LPIN1 - CC
Pioglitazone	✘	Poor	PPARG – CC

Vasodilators

Drug	Recommended	Response	Gene – Genotype
Hydralazine	✘	Poor	GNB3 – CC
Isosorbide dinitrate	✘	Poor	GNB3 – CC

Legends for Pharmacogenomics

Recommended

- ✔ This indicates a positive recommendation representing either a typical/normal or a better therapy outcome
- ✘ This indicates a negative recommendation representing a poor/low response as therapy outcome or in case of severe adverse events due to therapy. Alternative medications can be considered here
- ⚠ This indicates a recommendation wherein the therapy needs to be monitored with caution as it bears a typical risk of occurrence of adverse events

Response

1. **Typical** – This indicates that the rate of metabolism as well as efficacy of the drug would be normal
2. **Better** – This indicates that the drug would show an efficacy better than the normal and hence therapeutic outcome could be positive
3. **Poor** – This indicates that the rate of metabolism or the efficacy of the drug would be poor and hence the chances of therapeutic failure is high
4. **Adverse event** – This indicates that therapy with the drug will result in unfavorable clinical manifestations and hence caution needs to be exercised
5. **Dosage** - This indicates the recommendation for alteration of standard dosage as per studies correlating dosage effect with genotype



Gene – Genotype

This part of the report highlights the result of the genetic analysis based on which relevant conclusions pertaining to risk, drug efficacy and nutrigenetics have been drawn. Gene refers to the molecular region which has been proven to cause a significant effect, while genotype refers to the signature at a particular loci in that gene.

Comorbidities Risk Profile

Disease	Response	Fold
Atrial Fibrillation	High Risk	4.3
Coronary Artery Disease (CAD)	High Risk	6.6
Hypercholesterolemia	Average Risk	1.1
Diabetic Nephropathy	Average Risk	1.0
Diabetic Retinopathy	Average Risk	1.0
Hypertension	Average Risk	1.0
Hypoglycemia	Average Risk	1.0
Myocardial Infarction (Heart Attack)	Moderately High Risk	1.5
Obesity	High Risk	4.8
Stroke	Moderately High Risk	1.8
Venous Thromboembolism	Average Risk	1.0

High Risk

(>/=3) Indicates conditions which have been detected to bear a 3-fold risk of occurrence in comparison to average population risk

Moderately High Risk

1.5 – 2.9 Indicates conditions which have been detected to bear around a 2-fold risk of occurrence in comparison to average population risk

Average Risk

<1.5 Indicates conditions which have been detected to bear around a 1-fold risk of occurrence in comparison to average population risk

Positive Biosciences Ltd.

Corporate Office: 1st Floor Kohinoor City Mall, Gate No. 1, Kiro Road, Kurla West, Mumbai, Maharashtra, India 400070
 Toll Free: 1800 3070 6727 Website: www.positivebioscience.com Email: info@positivebioscience.com

Nutrigenomics

Diet Type	Consumption	Response	Food Source	Gene – Genotype
Tomato juice	Maximum	Additional benefit by including tomato juice in your diet	Tomato juice	PON1- AG
Oleic acid	Maximum	Additional benefit by including diet rich in oleic acid	Canola oil, Sunflower oil and Almonds	PON1- AG
Mediterranean diet	Maximum	Additional benefit of including mediterranean diet	Fruits, Vegetables, Nuts, Legumes, Olive oil	FTO - AT
Saturated fat	Minimize	Additional benefit by lowering intake of saturated fats	Peanut oil , Sesame oil ,Mustard oil, Sunflower oil and Coconut oil. Whole milk, Poultry, Eggs, Processed meat, Pork. Butter and Ghee. Bhajia, Pakodas, Farsan, and Samosas. Cakes, Pastries, Cream & Khari biscuit. Poppadum/papad, Puri and Bhatara	LEPR- AG
Omega-3 fatty acids	Maximum	Additional benefit by increasing consumption of dietary omega-3 fatty acids	Wheat, Pearl millet (bajra), Blackgram (kala chana), Kidney beans (rajmah), Cowpea, Fenugreek seed (methi), Mustard (sarson), Flaxseed & Perilla seeds(Bhanjira). Green leafy vegetables, Fruits. Salmon, Tuna, Trout, Sardines and other Oily fishes.	CETP- AG
Omega-6 polyunsaturated fatty acids	Minimize	Additional benefit by lowering consumption of dietary omega-6 fatty acids	Safflower oil, Sunflower seeds, Mayonnaise, Cheese flavor corn puffs, Fried onion rings, Cookies, Candies, Cakes, Pastries, Muffins, Cooked sausage, Cooked chicken, Cooked beef, Eggs, Butter, Taco shells	TCF7L2 - CT
Prudent diet	Maximum	Additional benefit by increasing consumption of prudent diet	Fruits, Berries, Vegetables,Fish, Nuts, and Whole grains	CDKN2B-AS1- AG
Vitamin D	Maximum	Additional benefit by increasing consumption of dietary Vitamin D	Mushrooms, Cheese, Fatty fish & Fish liver oils, Egg, Soy milk. Exposure to sunlight	GC- CC
Vitamin E	Typical	Typical benefit by increasing consumption of dietary Vitamin E	Spinach, Vegetable oils (sesame & rice bran oil), Peanuts, Avocado, Almonds,Asparagus, Broccoli, Shrimp and Hazelnuts	APOB-GG
Vitamin B6	Maximum	Additional benefit by increasing consumption of dietary Vitamin B6	Sunflower seeds, Pistachio nuts, Cooked fish, Prunes, Cooked spinach, Bananas, Avocado	NBPF3 - AC
Vitamin B12	Typical	Typical benefit by increasing consumption of dietary Vitamin B12	Cheese, Eggs, Yoghurt, Fortified cereals, Low fat dairy milk	FUT2 - AG
Vitamin A	Maximum	Additional benefit by increasing consumption of dietary Vitamin A	Dark green, yellow and orange colored vegetables, Carrots, Sweet potato, Pumpkin, Tomatoes, Papaya, Mango, Chicken & Mutton Liver, Milk	APOA5 - CC

Positive Biosciences Ltd.

Corporate Office: 1st Floor Kohinoor City Mall, Gate No. 1, Kiroi Road, Kurla West, Mumbai, Maharashtra, India 400070
 Toll Free: 1800 3070 6727 Website: www.positivebioscience.com Email: info@positivebioscience.com

Nutrigenomics

Diet Type	Consumption	Response	Food Source	Gene – Genotype
Monounsaturated fatty acids	Typical	Typical benefit of including MUFA sources in diet	Olive oil, Canola oil, Peanut oil, Sesame oil, Avocados, Peanut butter, Nuts and Seeds	PPARG - CC
Dietary fiber	Typical	Typical benefit of including dietary fiber in diet	Fruits, Vegetables, Whole grains, Legumes	TCF7L2 - AC
Insulin Sensitivity	To improve insulin sensitivity, regular exercise along with reducing intake of saturated and monounsaturated fatty acids in recommended.			LIPC - AG ADIPOQ - GG APOA1 - GG

Note:

- Ideal choice of cooking oil
- Groundnut or Sesame or Rice bran + Mustard
 - Groundnut or Sesame or Rice bran + Canola
 - Groundnut or Sesame or Rice bran + Soybean
 - Palmolein + Soybean
 - Safflower or Sunflower + Palmolein + Mustard

Source: "Dietary Guidelines for Indians" from National Institute of Nutrition

Legends for Nutrigenomics

Consumption

- Typical** – This indicates that the diet or nutrient suggested needs to be consumed at typical or normal levels as increasing or decreasing the same has not been shown to add any value addition to risk reduction as per your genotype result
- Maximum** – This indicates the suggested diet or nutrient has to be consumed in higher amounts as the same has been proven to be beneficial for risk reduction as per your genotype result
- Minimize** – This indicates that the suggested diet or nutrient has to be consumed in extremely lower quantities as increased or even typical consumption of the same may prove to increase risk predisposition as per your genotype result

Response - Nutrigenetics

- Additional benefit** – This indicates the suggested diet or nutrient when consumed as per the recommended levels will show additional benefit pertaining to either risk reduction or better disease management
- No additional benefit** – This indicates the suggested diet or nutrient when consumed at any levels will not show any benefit pertaining to risk reduction or disease management



Food Sources

As the name suggests, this column highlights all dietary sources which have been proven to be rich in a particular nutrient which can be included in the routine dietary regimen at levels suggested or excluded as the effect can be harmful as per genotype results



Gene – Genotype

This part of the report highlights the result of the genetic analysis based on which relevant conclusions pertaining to risk, drug efficacy and nutrigenetics have been drawn. Gene refers to the molecular region which has been proven to cause a significant effect, while genotype refers to the signature at a particular loci in that gene

Testing Methodology



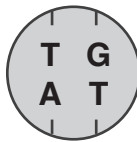
Sample : Whole Blood

3 - 5 mL of whole blood in EDTA tube



Wet-lab Analysis :

- DNA extraction
- QC analysis – QIAgen technology / Nano drop
- Microchipping Illumina analysis*



Data Analysis :

- Variant prioritization using inhouse proprietary "Algorithm"
- Risk estimation using our inhouse proprietary "Risk calculator"
- Pharmacogenetics and Nutrigenetics recommendations using our inhouse proprietary "Algorithm" and "Database"



Microchipping Technology

The Illumina human genotyping arrays are popular and led support for a variety of analysis extending from whole-genome, targeted genome as well as exome analyses. The BeadChip arrays as well as the Infinium assay technologies provide high-density genomic coverage and delivers exceptional data quality. The popularity of this technology has been attributed to its three virtues, being; sensitivity, specificity and reproducibility.

Analysed by:

Verified by:

Senior Scientific Officer

Chief Scientific Officer

Disclaimer: This is not a diagnostic test and so not to be considered as a purpose of diagnosis of any diseases. This test is meant for only understanding therapeutic outcome based on your genetic makeup. Clinician should use their own clinical judgement and not base clinical decisions solely on this document. Any test or medication mentioned in the report should be taken under doctor’s supervision.

This report must be given only in the presence of genetic counsellor or medical professional to explain the findings and implications. Positive Bioscience will not be liable for any direct, indirect, consequential, special, exemplary, or any other damages.

Note: This report is solely based on genetic makeup of the individuals and mutation detected at the time of sample collection. Individuals can show new mutations based on environmental changes that can alter outcome.