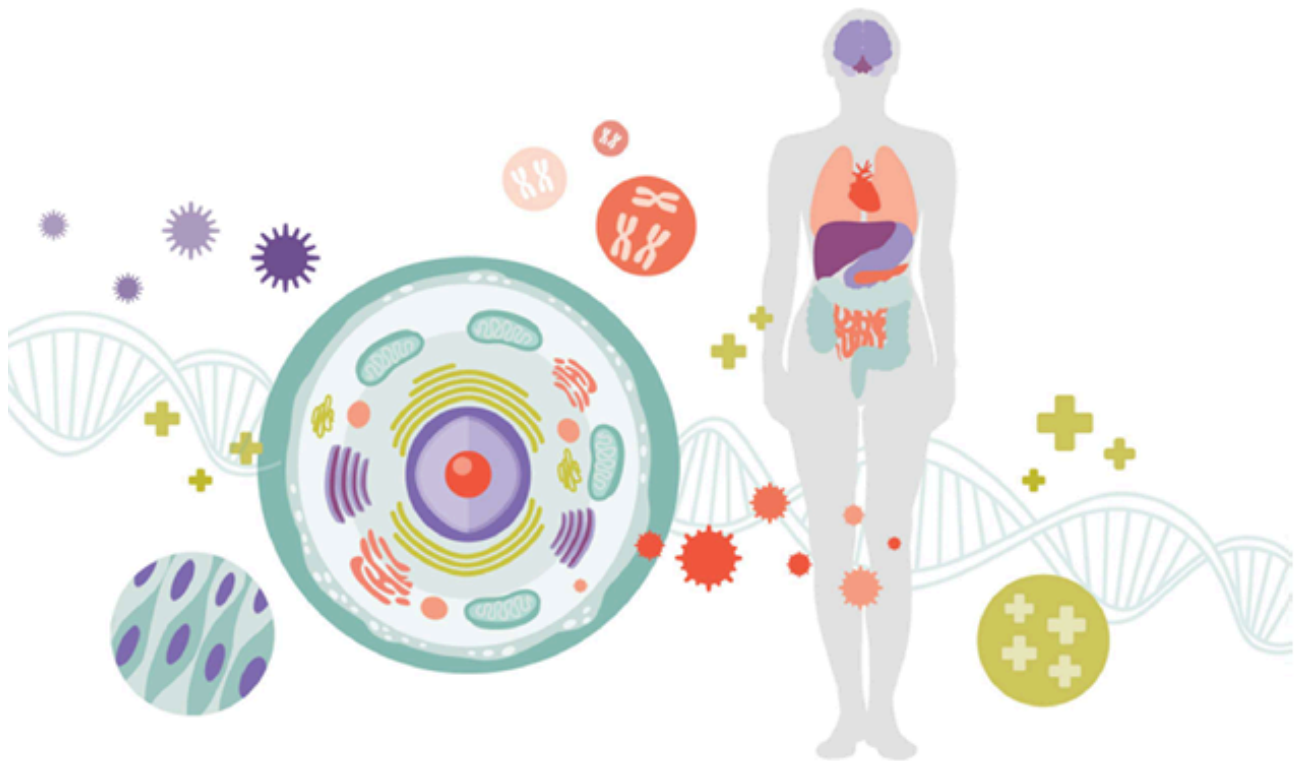




3x4 GENETICS



THE PERSONAL GENETIC STORY OF

BROCK LEE

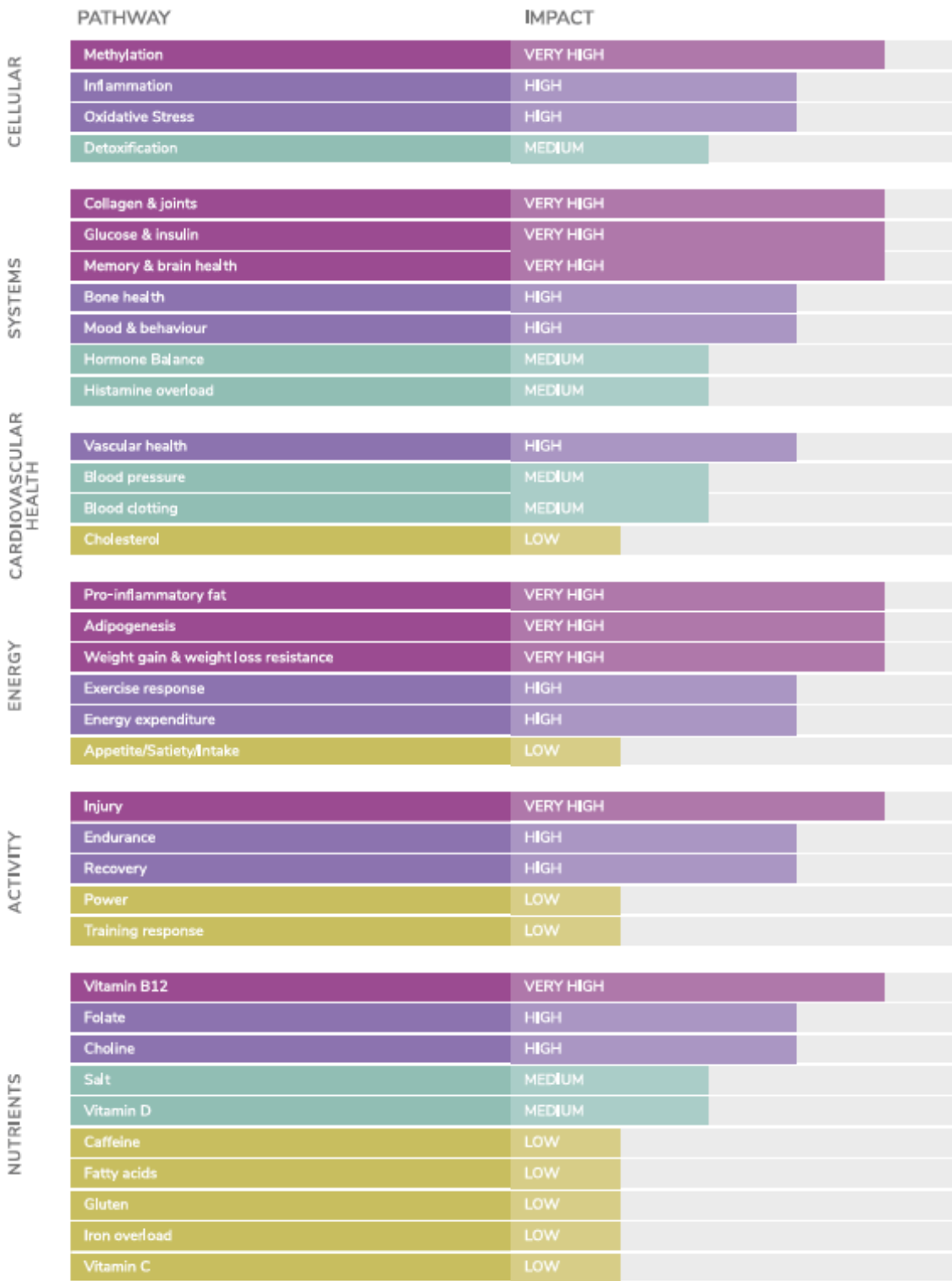
# YOUR GENE RESULTS

Brock Lee

Gene	Variant	Result	Gene	Variant	Result
NO IMPACT			HIGH		
UGT2B15	T>G	GG	ACE2	7132 T>C	TT
UGT2B17	INS/DEL	INS	ADIPOQ	-11391 G>A	GG
VDR	Fok1 T>C	CC	AGTR2	A>C	CC
VDR	Taq1 T>C	TC	CKM	Nco1 T>C	CC
VEGF	-634 G>C	GG	DRD1	-48 G>A	GA
LOW			DRD3	Ser9Gly C>T	CT
ACVR1B	A>G	AG	DRD4	-521 C>T	TT
ADIPOQ	-395 G>A	GA	FUT2	Gly258Ser G>A	GA
AKT1	G1172+23A T>C	TC	IL-6	-174 G>C	GG
CBS	699 C>T	CT	LEPR	Lys109Arg A>G	AA
CYP17A1	34 T>C	TC	MMP2	Gly226Gly G>C	CC
CYP2C9	Arg144Cys C>T	CT	MTHFD1	1958 G>A	GA
FADS1	592 G>T	GT	MTHFR	677 C>T	CT
GPX1	Pro198Leu C>T	CT	MTR	2756 A>G	GG
HNMT	939 A>G	AG	NAT2	R/I/S	Slow
HO-1	-413 A>T	AT	PENT	-744 G>C	GC
LPL	Ser474Ter C>G	CG	PPARG	Pro12Ala C>G	CC
NBPF3	T>C	TC	TOMM40	A>G	AG
PON1	Gln192Arg A>G	AG	VEGFR2	His472Gln T>A	AA
TAS2R38	Ala262Val C>T	CT	VERY HIGH		
MEDIUM			5HT2A	-1438 G>A	AA
ADRB2	Arg16Gly A>G	AG	★ ACE	Ins/Del	II
ADRB2	Gln27Glu C>G	CG	★ ACTN3	577 R/X	RR
AGT	Met235Thr A>G	AG	COL12A1	Alu1 A>G	AA
BDNF	Val66Met G>A	GA	CRP	2147 G>A	GG
CETP	G>A	GA	CYP1B1	Leu432Val C>G	GG
CETP	Taq1B G>A	GA	CYP2R1	A>G	GG
COMT	Val158Met G>A	GA	ENOS	Glu298Asp G>T	TT
DIO2	Thr92Ala T>C	TC	ESR2	1730 G>A	GA
GAD1	83-218C>T	TT	FTO	87653 T>A	AA
GC	A>C	AC	GDF5	5' UTR C>T	TT
HNMT	Thr105Ile C>T	CT	★ GSTM1	INS/DEL	DEL
IL-6R	Asp358Ala A>C	AC	IL-1	+/-	+
IRS1	C>T	CT	MAOA	Arg297Arg G>T	TT
LEPR	Lys656Asn G>C	GC	MNSOD	Val16Ala T>C	TT
MTHFR	1298 A>C	AC	MTNR1B	C>G	CG
MTRR	66 A>G	AG	PPARA	89204 G>C	GG
NQO1	Pro187Ser C>T	CT	PPARGC1A	Gly482Ser G>A	GA
OXTR	A>G	AG	TCF7L2	IVS3 C>T	TT
PLIN	11482 G>A	GA	★ TCN2	776 C>G	GG
SIRT1	994 T>C	TT	VEGFA	-2578 C>A	AA
TNFA	-308 G>A	GA			
VDR	Bsm1 G>A	GA			

# PATHWAY-BASED RESULTS

Brock Lee



# SYSTEMS & CARDIOVASCULAR OVERVIEW

Inside your body are several highly sophisticated metabolic systems keeping you alive, healthy, and running smoothly. This network is like a complex underground railroad system, where multiple separate but interconnected parts are meticulously organized to keep everything on track, on schedule, and functioning optimally.

5

## MOOD & BEHAVIOUR

**You are likely susceptible to mood imbalances.** Ensure adequate B vitamins, minerals, regular exercise, and stress management, to help create and maintain the balance of chemicals in the brain required to regulate mood.

3

## MEMORY & BRAIN HEALTH

**Without the right choices, there may be cognitive decline as you age.** Prioritize a healthy diet, regular exercise, activities involving hand-eye coordination, and brain games. These assist with maintaining flexibility in the brain, and the ability for learning, processing, remembering, and storing information.

7

## HISTAMINE OVERLOAD

**You may be mildly prone to histamine overload.** Consult with a healthcare practitioner to identify food and environmental triggers. Prioritize histamine-degrading foods (e.g. basil, oregano, celery, mango, capers). Histamine is produced during an immune response to allergens, injury, or toxins, leading to overload if not broken down effectively.

6

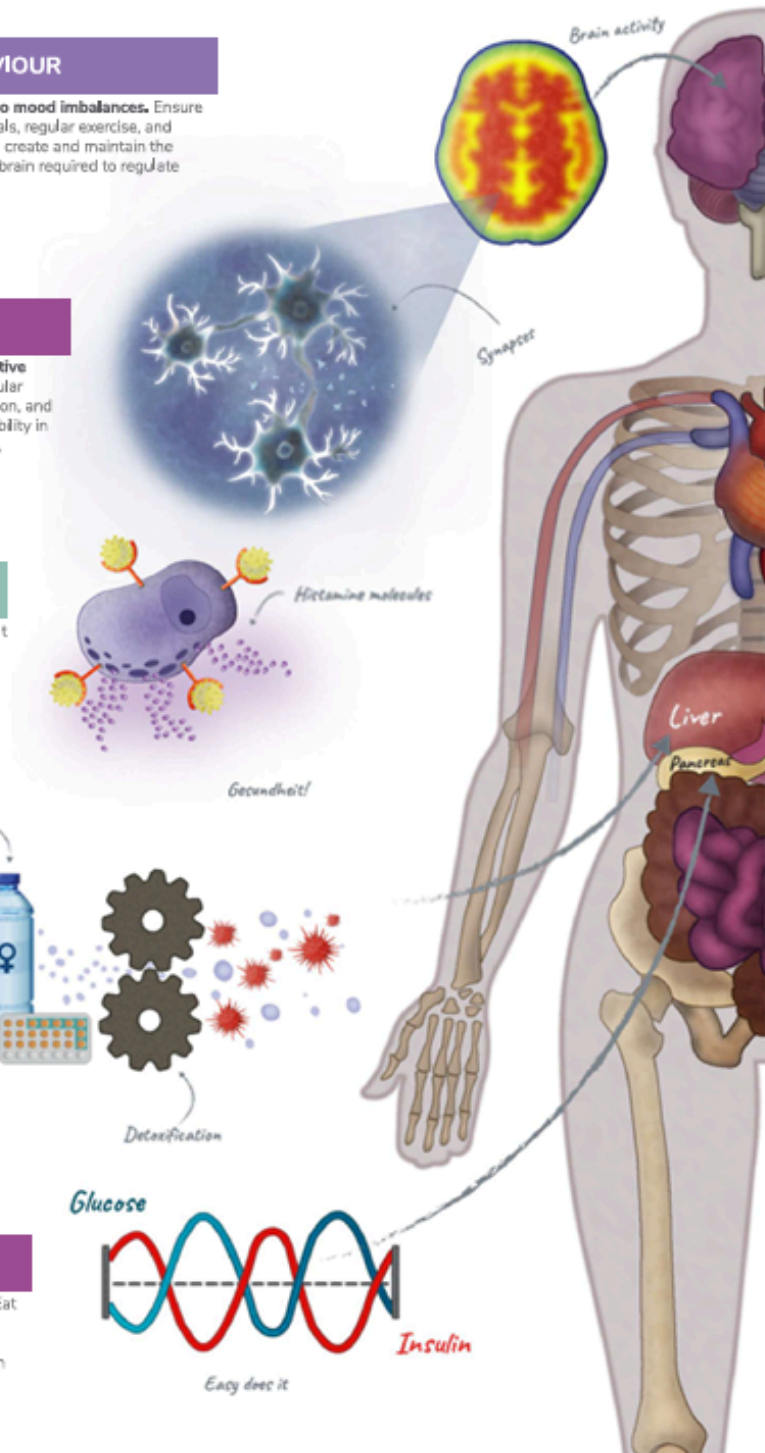
## HORMONE BALANCE

**Your hormone balance may be impaired.** Focus on sleep and stress management, regulate blood sugar, avoid all toxins, and eat vegetables from the broccoli family daily to support your body's ability to balance hormones.

2

## GLUCOSE & INSULIN

**You are likely prone to blood sugar dysregulation.** Eat unrefined high-fiber foods and prioritize the intake of quality proteins, plant fats, and vegetables to support blood sugar regulation. Glucose and insulin production needs to be in balance to prevent damage to cells, systems, and organs.



# ENERGY OVERVIEW

How we consume, absorb, distribute, store, and burn the calories we gain from food varies between individuals, largely because of genetic variation. People respond very differently to calories, exercise, fasting, fatigue, etc. Hunger and feeling full is also experienced very differently. Knowing in what way you're hard-wired to manage food can be a powerful way to enable you to work with your body, not against it.

6

## APPETITE/SATIETY/INTAKE

**You likely don't have an unregulated appetite.** Adequate quality protein and regular fiber, as well as mindful eating, contributes to better food choices.



*What does it take to get you feeling full?*

1

## PRO-INFLAMMATORY FAT

**Your fat cells are prone to inflammation.** Prioritize anti-inflammatory foods and avoid toxins, food additives, and stress, to help prevent fat cells from becoming inflamed. Inflammation inhibits the efficient release of energy from fat stores.

**Fat Cells**  
*Some people have more and bigger fat cells*

**Energy out**



5

## ENERGY EXPENDITURE

**Your resting metabolism may be slower than is optimal.** Prioritize fat-burning foods such as eggs, green tea, and spices like chili peppers. Also, include regular exercise and strength training to increase metabolism. Resting metabolism refers to the energy needed to carry out important bodily functions.

*How many calories do you burn each day*

2

## ADIPOGENESIS

**Your potential to readily store fat is highly elevated.** Support detoxification and inflammation, prioritize regular exercise and consider intermittent fasting to help release energy from fat stores. Adipogenesis refers to the ability of the body to make new fat cells and store them.

**Calories in**

4

## EXERCISE RESPONSE

**Your fat cells release fuel less efficiently when you exercise.** Regular exercise will always play a role in weight management and contributes greatly to general health and well-being. However, prioritizing a quality diet, good sleep, and stress management will be required to enable weight loss.

*How effective is exercise?*



3

## WEIGHT GAIN & WEIGHT LOSS RESISTANCE

**You are likely to gain weight easily and may lose weight slowly.** Consider working with a healthcare practitioner who can provide you with a personalized weight management program, including realistic



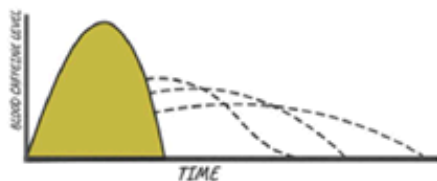


## NUTRIENTS OVERVIEW

Vitamins, minerals, and compounds found in food are integral to keeping our body's processes working optimally. They keep our cells robust and efficient, and they support our genes switching on and off as needed. Insights from our genes help us make the best dietary choices by understanding how we respond to certain foods and nutrients.

## CAFFEINE

**You are a fast metabolizer of caffeine.** You likely feel the effect of caffeine soon after consumption, including its ergogenic benefits.



## IRON OVERLOAD

**You have a very low chance of developing hemochromatosis.** If your blood iron profile is ever abnormal, investigate further as hemochromatosis is not the only reason for elevated iron. Iron accumulation in the body can precipitate a number of disease conditions, and should be ruled out.

## FATTY ACIDS

**You likely metabolize fatty acids optimally.**  
Optimizing fatty acid balance by including healthy fats and avoiding unhealthy fats is still essential. Fatty acids play many important roles in the body, including in cell membrane structure and function.

## CHOLINE

**You have an increased requirement for dietary choline.** Ensure you include dietary choline from foods such as eggs and peanuts, and supplements (if required). Choline regulates memory, mood, energy production, and DNA health, and also plays a valuable role in pregnancy and menopause.

**FOLATE**

**Your ability to optimally utilize dietary folate is likely reduced.** Ensure dark green leafy vegetables and beans daily to support your folate levels and consider supplements (if necessary). Folate builds tissues, maintains brain chemicals and blood cells, and ensures

# GENES BY PATHWAY

Brock Lee

3X4 builds Pathways by grouping together genes that together impact a specific metabolic area. Provided are your gene results, grouped by the Pathways they appear in. Both the Pathways and the Gene Results are color-coded, with purple having the highest impact, and light green the lowest impact. Genes with the most significant impact are indicated with a star ★, and genes with a protective impact are indicated with a shield 🛡️.

## CELLULAR

METHYLATION	1	INFLAMMATION	2	OXIDATIVE STRESS	3	DETOXIFICATION	4
MTR 2756 A>G	GG	IL-1 *†	+	MNSOD Val16Ala T>C	TT	* GSTM1 INS/DEL	DEL
COMT Val158Met G>A	GA	CRP 2147 G>A	GG	PPARGC1A Gly482Ser G>A	GA	CYP1B1 Leu432Val C>G	GG
MTHFD1 1958 G>A	GA	ENOS Glu298Asp G>T	TT	ENOS Glu298Asp G>T	TT	NAT2 R/S	Slow
MTHFR 1298 A>C	AC	CYP1B1 Leu432Val C>G	GG	GSTM1 INS/DEL	DEL	COMT Val158Met G>A	GA
MTHFR 677 C>T	CT	HNMT Thr105Ile C>T	CT	NQO1 Pro187Ser C>T	CT	MNSOD Val16Ala T>C	TT
MTRR 66 A>G	AG	IL-6R Asp358Ala A>C	AC	PPARG Pro12Ala C>G	CC	NQO1 Pro187Ser C>T	CT
NQO1 Pro187Ser C>T	CT	MNSOD Val16Ala T>C	TT	GPX1 Pro198Leu C>T	CT	CYP17A1 34 T>C	TC
TCN2 776 C>G	GG	SIRT1 994 T>C	TT	HO-1 -413 A>T	AT	CYP2C9 Arg144Cys C>T	CT
CBS 699 C>T	CT	TNFA -308 G>A	GA	PON1 Gln192Arg A>G	AG	MTHFR 677 C>T	CT
NBPF3 T>C	TC	FADS1 592 G>T	GT	TNFA -308 G>A	GA	PON1 Gln192Arg A>G	AG
PEMT -744 G>C	GC	HO-1 -413 A>T	AT	🛡️ CAT -262 C>T	CC	ALDH2 Glu504Lys G>A	GG
🛡️ BHMT Arg239Glu G>A	GA	APOE E2/E3/E4	E3/E3	ALDH2 Glu504Lys G>A	GG	CYP1A1 Ile462Val A>G	AA
CHDH T>G	TT	CYP1A1 Ile462Val A>G	AA	APOE E2/E3/E4	E3/E3	CYP1A2 -163 A>C	AA
OGG1 Ser326Cys C>G	CC	DAO His645Asp C>G	CC	GSTO2 Asn142Asp A>G	AA	CYP1B1 Asn453Ser A>G	AA
		FOXO3 G>T	GT	GSTP1 Ile105Val A>G	AA	CYP2C19 *1/*2/*17	*1/*1
		FUT2 Trp153Tyr G>A	GA	GSTT1 INS/DEL	INS	CYP2C9 Ile359Leu A>C	AA
		HLA DQ 2.2/2.5/8	DQ2.2/DQ2.2	HFE C282Y/H63D	CC/HH	CYP2D6 *1/*3/*10	*1/*1
		IL-6 -174 G>C	GG	OGG1 Ser326Cys C>G	CC	CYP3A4 -392 A>G	AA
		PPARA 89204 G>C	GG	UCP1 -3826 A>G	AA	EPHX1 Tyr113His T>C	TT
		SLC22A5 G>A	GA	UCP2 -866 G>A	GG	GSTO2 Asn142Asp A>G	AA
		TIMP4 -55 T>C	CT	UCP3 -55 C>T	CC	GSTP1 Ala114Val C>T	CC
		TNFA -238 G>A	GG			GSTP1 Ile105Val A>G	AA
						GSTT1 INS/DEL	INS
						NAT1 Arg187Gln G>A	GG
						SULT1A1 Arg213His G>A	GG