

# The PureGenomics® Antioxidant & Cellular Defense Protocol<sup>‡</sup>

Developed with Nathan Morris, M.D.<sup>†</sup>

Gene	SNP	Alleles	What it means	Diet & Lifestyle Recommendations	Pure Encapsulations® Products <sup>‡</sup>
COMT	Val158Met (rs4680)	Met/Met (+/+) Val/Met (-/+) Val/Val (-/-)	Reduced detoxification of catecholamines and estrogen.	(+/-) or (-/+) <ul style="list-style-type: none"> <li>Manage stress with meditation, yoga or breathing exercises. Include vegetables such as broccoli, cauliflower, and Brussels sprouts in your diet to support estrogen metabolism. Consider supplement options for hormonal balance and, if applicable, for sleep and relaxation support.</li> </ul> (-/-) <ul style="list-style-type: none"> <li>No recommendations</li> </ul>	(+/-) or (-/+) <ul style="list-style-type: none"> <li>Lithium (orotate) 5 mg</li> <li>Magnesium (glycinate)</li> <li>Adenosyl/Hydroxy B<sub>12</sub></li> <li>DIM Detox</li> <li>SAME</li> <li>PureGenomics® Multivitamin</li> </ul> (-/-) <ul style="list-style-type: none"> <li>No Recommendations</li> </ul>
CYP1A2	CYP1A2 or CYP1A2*1F A-164C or A-163C (rs762551)	C/C (+/+) A/C (-/+) A/A (-/-)	The C allele reduces enzyme function, resulting in slow metabolism of caffeine. This SNP also affects metabolism of certain toxins.	(+/-) <ul style="list-style-type: none"> <li>Limit caffeine intake, as it may exacerbate stress and interfere with sleep. Consider adaptogenic herbs for occasional fatigue. Include raw cruciferous vegetables in the diet to support detoxification. Limit grapefruit juice consumption, which has a mild inhibitory effect on this enzyme.</li> </ul> (-/+) <ul style="list-style-type: none"> <li>Limit caffeine intake, as it may exacerbate stress and interfere with sleep. Consider adaptogenic herbs for occasional fatigue.</li> </ul> (-/-) <ul style="list-style-type: none"> <li>No recommendations</li> </ul>	(+/-) or (-/+) <ul style="list-style-type: none"> <li>Energy Xtra</li> </ul> (-/-) <ul style="list-style-type: none"> <li>No recommendations</li> </ul>
GPx1P1	Pro198Leu (rs1050450)	T/T (+/+) C/T (-/+) C/C (-/-)	Reduced capacity to detoxify hydrogen peroxide, a reactive oxygen species.	(+/-) or (-/+) <ul style="list-style-type: none"> <li>Consume a diet rich in fruits and vegetables. Include cruciferous vegetables such as broccoli, Brussels sprouts, arugula, kale and cauliflower. Antioxidant supplements may be recommended.</li> </ul> (-/-) <ul style="list-style-type: none"> <li>No recommendations</li> </ul>	(+/-) or (-/+) <ul style="list-style-type: none"> <li>Selenium (selenomethionine)</li> <li>Liposomal Glutathione</li> <li>DIM Detox</li> <li>Ascorbic Acid or Buffered Ascorbic Acid (capsules or powder)</li> <li>Nrf2 Detox</li> </ul> (-/-) <ul style="list-style-type: none"> <li>No recommendations</li> </ul>
GSTP1	Ile105Val (rs1695)	G/G (+/+) A/G (-/+) A/A (-/-)	Reduced ability to conjugate certain toxins with glutathione.	(+/-) or (-/+) <ul style="list-style-type: none"> <li>Consume a diet rich in fruits and vegetables. Include cruciferous vegetables such as broccoli, Brussels sprouts, arugula, kale and cauliflower. Supplements to support detoxification may be recommended.</li> </ul> (-/-) <ul style="list-style-type: none"> <li>No recommendations</li> </ul>	(+/-) or (-/+) <ul style="list-style-type: none"> <li>Liposomal Glutathione</li> <li>Alpha Lipoic Acid 400 mg</li> <li>NAC (N-acetyl-L-cysteine)</li> <li>DIM Detox</li> <li>Nrf2 Detox</li> </ul> (-/-) <ul style="list-style-type: none"> <li>No recommendations</li> </ul>
NQO1	C609T Pro187Ser (rs1800566)	T/T (+/+) C/T (-/+) C/C (-/-)	The T allele is associated with reduced enzyme activity.	(+/-) or (-/+) <ul style="list-style-type: none"> <li>Limit exposure to tobacco smoke. Exercise regularly and consume cruciferous vegetables.</li> </ul> (-/-) <ul style="list-style-type: none"> <li>No recommendations</li> </ul>	(+/-) or (-/+) <ul style="list-style-type: none"> <li>Nrf2 Detox</li> </ul> (-/-) <ul style="list-style-type: none"> <li>No recommendations</li> </ul>
SOD2	Val16Ala (rs4880)	G/G (+/+) A/G (-/+) A/A (-/-)	Alters the distribution of the SOD2 enzyme (cytosolic vs. mitochondrial), which may compromise antioxidant defenses.	(+/-) or (-/+) <ul style="list-style-type: none"> <li>Studies suggest that higher consumption of foods rich in lycopene and other antioxidants support breast and prostate health in individuals with this genetic variation. Emphasize colorful fruits and vegetables, and include cruciferous vegetables such as broccoli, Brussels sprouts, arugula, kale and cauliflower.</li> </ul> (-/-) <ul style="list-style-type: none"> <li>No recommendations</li> </ul>	(+/-) or (-/+) <ul style="list-style-type: none"> <li>DIM Detox</li> <li>Nrf2 Detox</li> <li>Ascorbic Acid or Buffered Ascorbic Acid (capsules or powder)</li> </ul> (-/-) <ul style="list-style-type: none"> <li>No recommendations</li> </ul>

Please note that these SNPs are markers of genetic predisposition supported by a limited, yet evolving body of evidence. Due to the many factors that modify their effects on physiology, a positive result does not necessarily mean that any or all of the recommended supplements are needed. Consider additional methods, such as those listed under Assessment Recommendations, to determine the need for support.

<sup>†</sup>Dr. Morris is a retained consultant for Pure Encapsulations.

<sup>‡</sup>These statements have not been evaluated by the Food & Drug Administration. These products are not intended to diagnose, treat, cure or prevent any disease.

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Gene and SNP	Assessment Recommendations
<b>COMT</b> Val158Met (rs4680)	<b>Urinary estrogen metabolite ratio (2-OH(E1+E2) / 16α-OHE1)*:</b> Indicates how effectively a patient methylates estrogens (2-hydroxyestrone to 2-methoxyestrone). Premenopausal, luteal phase women: 0.3-13.7, Postmenopausal women: 0.3-15.1, Men: 0.8-12.9
<b>CYP1A2</b> CYP1A2 or CYP1A2*1F A-164C or A-163C (rs762551)	Self-reported daily caffeine intake, stress levels and sleep habits.
<b>GPx1P1</b> Pro198Leu (rs1050450)	<b>NutrEval® FMV</b> (Genova Diagnostics®) includes an analysis of antioxidant status as part of the comprehensive evaluation. <b>The Oxidative Stress Analysis 2.0</b> (Genova Diagnostics®) provides a more in-depth assessment of antioxidant defenses. <b>Urinary F2-isoprostanes</b> are also useful in assessing and monitoring systemic antioxidant status.
<b>GSTP1</b> Ile105Val (rs1695)	No assessment methods are currently available for this SNP.
<b>NQO1</b> C609T Pro187Ser (rs1800566)	No assessment methods are currently available for this SNP.
<b>SOD2</b> Val16Ala (rs4880)	<b>NutrEval® FMV</b> (Genova Diagnostics®) includes an analysis of antioxidant status as part of the comprehensive evaluation. <b>The Oxidative Stress Analysis 2.0</b> (Genova Diagnostics®) provides a more in-depth assessment of antioxidant defenses. <b>Urinary F2-isoprostanes</b> are also useful in assessing and monitoring systemic antioxidant status.

\*Reference ranges were obtained from Genova Diagnostics. These ranges apply to adults only.

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