rs1695

This SNP, in the GSTP1 (/index.php/GSTP1) gene influences asthma (/index.php/Asthma) risk; the (A) allele encodes the Ile, while the (G) allele encodes the Val. This SNP is also known as GSTP1Val105, or GSTP1 Ile105Val.

Despite evidence of antioxidant effects of vitamin E in vitro and in animal studies, large, randomized clinical trials have not substantiated a benefit of vitamin E in reducing inflammation in humans. In healthy control subjects, the effect of α-tocopherol supplementation on the production of inflammatory cytokines appears to be dependent on an individual's genotype. These genotype-specific differences may help explain some of the discordant results in studies that used vitamin E. Persons having the alleles AA or AG had an increase in interleukin-6 (IL-6) upon supplementing alpha-tocopherol (the most common form of Vitamin E in a North American diet) while those with GG saw a decrease. [PMID 22572643 (https://www.ncbi.nlm.nih.gov/pubmed/22572643?dopt=Abstract)]

This research paper (http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Retrieve&dopt=AbstractPlus&list_uids=16882827&query_hl=1&itool=pubmed_docsum) shows that 13- to 21-year-olds exposed to tobacco smoke at home, with this mutation had more severe asthma (/index.php/Asthma) than those without the mutation. rs1695 is also mentioned in this bbc article (http://news.bbc.co.uk/2/hi/uk_news/scotland/tayside_and_central/5251968.stm)

Several papers published findings associating GSTP1 Ile105Val genotypes with bronchial, childhood, or atopic asthma. [PMID 15612961 (https://www.ncbi.nlm.nih.gov/pubmed/15612961?dopt=Abstract)]

Note that some studies, however, have not observed any association between this SNP and asthma in certain populations [PMID 16176403 (https://www.ncbi.nlm.nih.gov/pubmed

influences asthma risk

Orientation (/index.php/Orientation) plus

Stabilized (/index.php/StabilizedOrientation) plus

Geno	Mag (/index.php/Magnitude)	Summary
(A;A) (/index.php/Rs1695(A;A))	0	normal asthma risk in certain populations
(A;G) (/index.php/Rs1695(A;G))		?
(G;G) (/index.php/Rs1695(G;G))	2.1	3.5x asthma risk in certain populations

/16176403?dopt=Abstract)], or even more paradoxically, have observed that rs1695(G;G) homozygotes appear to be somewhat protected (OR 0.29) from developing asthma compared to individuals with rs1695(A;G) or (A;A) genotypes. [PMID 14748821 (https://www.ncbi.nlm.nih.gov/pubmed/14748821?dopt=Abstract) (/index.php/File:OA-icon.png)]

A cohort of 1,610 children in the US were studied to determine that the risk for new-onset asthma (/index.php/Asthma) was highest in rs1695(A;A) homozygotes who participated in 3 or more sports in high-ozone communities. These children were at 6x higher risk (CI: 2.2-7.4). [PMID 18988661 (https://www.ncbi.nlm.nih.gov/pubmed/18988661?dopt=Abstract) (/index.php/File:OA-icon.png)]

A study of 3,000 Chinese women with breast cancer (/index.php/Breast_cancer) concluded that rs1695(G;G) genotype was significantly associated with greater breast cancer risk, particularly in premenopausal women (odds ratio 1.69, CI: 1.17-2.43). The odds increased further if such women reported eating little cruciferous vegetables (then the odds ratio was 2.08, CI: 1.20-3.59).[PMID 18326615 (https://www.ncbi.nlm.nih.gov/pubmed/18326615?dopt=Abstract)]

A relatively small study of 58 patients with different types of cancer (/index.php/Cancer) receiving docetaxel (/index.php/Docetaxel) concluded that rs1695(A;A) homozygotes (i.e. Ile105/Ile105 homozygotes) had a higher risk of developing docetaxel-induced peripheral neuropathy (DIPN), particularly grade 2 or higher. The odds ratio reported was 6.1 (CI: 1.17-31.9, p=0.03).[PMID 19223573 (https://www.ncbi.nlm.nih.gov/pubmed/19223573?dopt=Abstract)]

[PMID 19383894 (https://www.ncbi.nlm.nih.gov/pubmed/19383894?dopt=Abstract) (/index.php/File:OA-icon.png)] Genetic Polymorphisms in the Catechol Estrogen Metabolism Pathway and Breast Cancer Risk

[PMID 19403501 (https://www.ncbi.nlm.nih.gov/pubmed/19403501?dopt=Abstract)] In Utero Smoke Exposure, Glutathione S-Transferase P1 Haplotypes, and Respiratory Illness-Related Absence Among Schoolchildren

[PMID 19921428 (https://www.ncbi.nlm.nih.gov/pubmed/19921428?dopt=Abstract) (/index.php/File:OA-icon.png)] Pooled analysis indicates that the GSTT1 deletion, GSTM1 deletion, and GSTP1 Ile105Val polymorphisms do not modify breast cancer risk in BRCA1 and BRCA2 mutation carriers

[PMID 20472488 (https://www.ncbi.nlm.nih.gov/pubmed/20472488?dopt=Abstract)] GST polymorphisms, interaction with smoking and pesticide use, and risk for Parkinson's disease in a Japanese population

Reference	GRCh38 (/index.php/GRCh38) 38.1/141
Chromosome	11
Position	67585218
Gene	GSTP1 (/index.php/GSTP1)
is a	snp (/index.php/Snp)
is	mentioned by (/index.php/Special:WhatLinksHere/Rs1695)
dbSNP	rs1695 (https://www.ncbi.nlm.nih.gov/snp/rs1695)
dbSNP (classic)	rs1695 (https://www.ncbi.nlm.nih.gov/projects/SNP/snp_ref.cgi?do_not_redirect&rs=rs1
ClinGen	rs1695 (http://reg.clinicalgenome.org/redr/projects/registry/genboree_registry/alleles?dbSNP.rs=1695)
ebi	rs1695 (https://www.ebi.ac.uk/gwas/search?query=rs1695)
HLI	rs1695 (https://search.hli.io/?q=rs1695)
Exac	rs1695 (http://exac.broadinstitute.org/awesome?query=rs1695)
Gnomad	rs1695 (http://gnomad.broadinstitute.org/awesome?query=rs1695)
Varsome	rs1695 (https://varsome.com/variant/hg19/rs1695)
LitVar	rs1695 (https://www.ncbi.nlm.nih.gov/CBBresearch/Lu/Demo/LitVar/#!?query=rs1695)
Map	rs1695 (http://popgen.uchicago.edu/ggv/?search=rs1695)
PheGenI	rs1695 (http://www.ncbi.nlm.nih.gov/gap/PheGenI?tab=2&rs=1695)
Biobank	rs1695 (https://biobankengine.stanford.ec/awesome?query=rs1695)

[PMID 21320344 (https://www.ncbi.nlm.nih.gov/pubmed/21320344?dopt=Abstract)](/index.php/File:OA-icon.png) Evaluation of genetic susceptibility to childhood allergy and asthma in an African American urban population

[PMID 20938339 (https://www.ncbi.nlm.nih.gov/pubmed/20938339?dopt=Abstract)] Temozolomide-induced severe myelosuppression: analysis of clinically associated polymorphisms in two patients

[PMID 21164266 (https://www.ncbi.nlm.nih.gov/pubmed/21164266?dopt=Abstract)] Glucocorticoid resistance

[PMID 21567099 (https://www.ncbi.nlm.nih.gov/pubmed/21567099?dopt=Abstract)] Estrogen metabolism genotypes, use of long-term hormone replacement therapy and risk of postmenopausal breast cancer

[PMID 21723269 (https://www.ncbi.nlm.nih.gov/pubmed/21723269?dopt=Abstract)] Genetic profiling of GSTP1, DPYD, FCGR2A, FCGR3A and CCND1 genes in an Argentinian population

[PMID 22052985 (https://www.ncbi.nlm.nih.gov/pubmed/22052985?dopt=Abstract)] Glutathione S-transferase P1 c.313A > G polymorphism could be useful in the prediction of doxorubicin response in breast cancer patients

[PMID 22216261 (https://www.ncbi.nlm.nih.gov/pubmed/22216261?dopt=Abstract)](/index.php/File:OA-icon.png) Association of a Deletion of GSTT2B with an Altered Risk of Oesophageal Squamous Cell Carcinoma in a South African Population: A Case-Control Study

[PMID 21914837 (https://www.ncbi.nlm.nih.gov/pubmed/21914837?dopt=Abstract)](/index.php/File:OA-icon.png) Childhood brain tumors and maternal cured meat consumption in pregnancy: differential effect by glutathione S-transferases

[PMID 22795327 (https://www.ncbi.nlm.nih.gov/pubmed/22795327?dopt=Abstract)] Selected polymorphisms of GSTP1 and TERT were associated with glioma risk in Han Chinese

[PMID 15726497 (https://www.ncbi.nlm.nih.gov/pubmed/15726497?dopt=Abstract)](/index.php

1000 genomes (/index.php/1000_genomes)	rs1695 (http://browser.1000genomes.org/Homo_sapiens/Variation/Population?v=rs1695;vdb=variation)
hgdp	rs1695 (http://hgdp.uchicago.edu/cgi-bin/gbrowse/HGDP/?name=SNP%3Ars1
ensembl	rs1695 (http://www.ensembl.org/Homo_sapiens/snpview?source=dbSNP;snp=rs1695)
geneview	rs1695 (http://bc3.informatik.hu-berlin.de/search?gv_search_query=RS:1695)
scholar	rs1695 (http://scholar.google.com/scholar?q=rs1695&as_subj=bio)
google	rs1695 (http://www.google.com/search?hl=en&q=rs1695)
pharmgkb	rs1695 (http://www.pharmgkb.org/rsid/rs1695)
gwascentral	rs1695 (http://www.gwascentral.org/mark/dbSNP:rs1695)
openSNP	rs1695 (https://opensnp.org/snps/rs1695#users)
23andMe (/index.php/23andMe_(help))	rs1695 (https://www.23andme.com/you/explorer/snp/?snp_name=rs1695)
23andMe all	rs1695 (https://www.23andme.com/you/search/?isearch=rs1695)
SNPshot	rs1695 (http://bioai4core.fulton.asu.edu/snpshot/FactSheet?id=rs1695&type=RSI
SNPdbe	rs1695 (http://www.rostlab.org/services/snpdbe/dosearch.php?id=mutation&val=rs1695)
MSV3d	rs1695 (http://decrypthon.igbmc.fr/msv3d/cgi-bin/humsavar?rsid=rs1695)
GWAS Ctlg	rs1695 (https://www.ebi.ac.uk/gwas/search?query=rs1695)

/File:OA-icon.png)] Gene-environment interaction effects on the development of immune responses in the 1st year of life.

[PMID 16112301 (https://www.ncbi.nlm.nih.gov/pubmed/16112301?dopt=Abstract) (/index.php /File:OA-icon.png)] NAT2 slow acetylation, GSTM1 null genotype, and risk of bladder cancer: results from the Spanish Bladder Cancer Study and meta-analyses.

[PMID 17054776 (https://www.ncbi.nlm.nih.gov/pubmed/17054776?dopt=Abstract) (/index.php /File:OA-icon.png)] The genetics of chronic obstructive pulmonary disease.

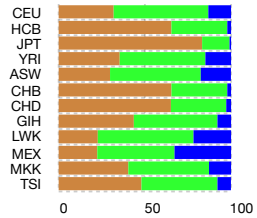
[PMID 17160896 (https://www.ncbi.nlm.nih.gov/pubmed/17160896?dopt=Abstract) (/index.php /File:OA-icon.png)] Orofacial cleft risk is increased with maternal smoking and specific detoxification-gene variants.

[PMID 17194543 (https://www.ncbi.nlm.nih.gov/pubmed/17194543?dopt=Abstract) (/index.php /File:OA-icon.png)] Glutathione S-transferase mu, omega, pi, and theta class variants and smoking in Parkinson's disease.

[PMID 17366837 (https://www.ncbi.nlm.nih.gov/pubmed/17366837?dopt=Abstract) (/index.php /File:OA-icon.png)] Genetic studies of a cluster of acute lymphoblastic leukemia cases in Churchill County, Nevada.

Merged (/index.php /Merged) from GMAF (/index.php /GMAF)	Rs947894 (/index.php /Rs947894)
	0.3246
Max Magnitude (/index.php /Max_Magnitude)	2.1

? (/index.php /Help_(population_diversity)) **(A;A) (A;G) (G;G)** **28**



[PMID 17424838 (https://www.ncbi.nlm.nih.gov/pubmed/17424838?dopt=Abstract)] [Genetic polymorphisms of MPO, NQO1, GSTP1, UGT1A6 associated with susceptibility of chronic benzene poisoning].

[PMID 17498780 (https://www.ncbi.nlm.nih.gov/pubmed/17498780?dopt=Abstract)] The influence of metabolic gene polymorphisms on urinary 1-hydroxypyrene concentrations in Chinese coke oven workers.

[PMID 17548691 (https://www.ncbi.nlm.nih.gov/pubmed/17548691?dopt=Abstract) (/index.php/File:OA-icon.png)] Associations between smoking, polymorphisms in polycyclic aromatic hydrocarbon (PAH) metabolism and conjugation genes and PAH-DNA adducts in prostate tumors differ by race.

[PMID 17601350 (https://www.ncbi.nlm.nih.gov/pubmed/17601350?dopt=Abstract) (/index.php/File:OA-icon.png)] A genetic association analysis of cognitive ability and cognitive ageing using 325 markers for 109 genes associated with oxidative stress or cognition.

[PMID 17885617 (https://www.ncbi.nlm.nih.gov/pubmed/17885617?dopt=Abstract)] Genetic polymorphisms and benzene metabolism in humans exposed to a wide range of air concentrations.

[PMID 18182569 (https://www.ncbi.nlm.nih.gov/pubmed/18182569?dopt=Abstract) (/index.php/File:OA-icon.png)] Pharmacogenetics of minimal residual disease response in children with B-precursor acute lymphoblastic leukemia: a report from the Children's Oncology Group.

[PMID 18191955 (https://www.ncbi.nlm.nih.gov/pubmed/18191955?dopt=Abstract) (/index.php/File:OA-icon.png)] Correlating observed odds ratios from lung cancer case-control studies to SNP functional scores predicted by bioinformatic tools.

[PMID 18335111 (https://www.ncbi.nlm.nih.gov/pubmed/18335111?dopt=Abstract) (/index.php/File:OA-icon.png)] Glutathione S-transferase P1, maternal smoking, and asthma in children: a haplotype-based analysis.

[PMID 18547414 (https://www.ncbi.nlm.nih.gov/pubmed/18547414?dopt=Abstract) (/index.php/File:OA-icon.png)] Genotyping panel for assessing response to cancer chemotherapy.

[PMID 18559526 (https://www.ncbi.nlm.nih.gov/pubmed/18559526?dopt=Abstract) (/index.php/File:OA-icon.png)] Glutathione s-transferase p1: gene sequence variation and functional genomic studies.

[PMID 18601742 (https://www.ncbi.nlm.nih.gov/pubmed/18601742?dopt=Abstract) (/index.php/File:OA-icon.png)] Polymorphisms of selected xenobiotic genes contribute to the development of papillary thyroid cancer susceptibility in Middle Eastern population.

[PMID 18628428 (https://www.ncbi.nlm.nih.gov/pubmed/18628428?dopt=Abstract) (/index.php/File:OA-icon.png)] Polymorphisms in genes involved in sex hormone metabolism, estrogen plus progestin hormone therapy use, and risk of postmenopausal breast cancer.

[PMID 18709160 (https://www.ncbi.nlm.nih.gov/pubmed/18709160?dopt=Abstract) (/index.php/File:OA-icon.png)] Interactions between glutathione S-transferase P1, tumor necrosis factor, and traffic-related air pollution for development of childhood allergic disease.

[PMID 18776599 (https://www.ncbi.nlm.nih.gov/pubmed/18776599?dopt=Abstract) (/index.php/File:OA-icon.png)] Susceptibility genes for gentamicin-induced vestibular dysfunction.

[PMID 18784359 (https://www.ncbi.nlm.nih.gov/pubmed/18784359?dopt=Abstract)] Polymorphisms in phase I and phase II metabolism genes and risk of chronic benzene poisoning in a Chinese occupational population.

[PMID 18787887 (https://www.ncbi.nlm.nih.gov/pubmed/18787887?dopt=Abstract)OA (/index.php/File:OA-icon.png)] Genetic variation in candidate osteoporosis genes, bone mineral density, and fracture risk: the study of osteoporotic fractures.

[PMID 18805939 (https://www.ncbi.nlm.nih.gov/pubmed/18805939?dopt=Abstract)OA (/index.php/File:OA-icon.png)] Functional genetic polymorphisms and female reproductive disorders: part II--endometriosis.

[PMID 18854777 (https://www.ncbi.nlm.nih.gov/pubmed/18854777?dopt=Abstract)OA (/index.php/File:OA-icon.png)] Germline genetic variations in drug action pathways predict clinical outcomes in advanced lung cancer treated with platinum-based chemotherapy.

[PMID 18992148 (https://www.ncbi.nlm.nih.gov/pubmed/18992148?dopt=Abstract)OA (/index.php/File:OA-icon.png)] Low-penetrance alleles predisposing to sporadic colorectal cancers: a French case-controlled genetic association study.

[PMID 19076156 (https://www.ncbi.nlm.nih.gov/pubmed/19076156?dopt=Abstract)OA (/index.php/File:OA-icon.png)] Polymorphisms of drug-metabolizing enzymes (GST, CYP2B6 and CYP3A) affect the pharmacokinetics of thiotepa and tepa.

[PMID 19124514 (https://www.ncbi.nlm.nih.gov/pubmed/19124514?dopt=Abstract)OA (/index.php/File:OA-icon.png)] Urinary isothiocyanates; glutathione S-transferase M1, T1, and P1 polymorphisms; and risk of colorectal cancer: the Multiethnic Cohort Study.

[PMID 19131562 (https://www.ncbi.nlm.nih.gov/pubmed/19131562?dopt=Abstract)OA (/index.php/File:OA-icon.png)] Biomarkers of human exposure to acrylamide and relation to polymorphisms in metabolizing genes.

[PMID 19174490 (https://www.ncbi.nlm.nih.gov/pubmed/19174490?dopt=Abstract)OA (/index.php/File:OA-icon.png)] Tobacco and estrogen metabolic polymorphisms and risk of non-small cell lung cancer in women.

[PMID 19223546 (https://www.ncbi.nlm.nih.gov/pubmed/19223546?dopt=Abstract)OA (/index.php/File:OA-icon.png)] Xenobiotic metabolizing gene variants, dietary heterocyclic amine intake, and risk of prostate cancer.

[PMID 19258736 (https://www.ncbi.nlm.nih.gov/pubmed/19258736?dopt=Abstract)] Glutathione s-transferase variants in a brazilian population.

[PMID 19267064 (https://www.ncbi.nlm.nih.gov/pubmed/19267064?dopt=Abstract)] [Relationship between genetic polymorphisms of phase I and phase II metabolizing enzymes and DNA damage of workers exposed to vinyl chloride monomer].

[PMID 19338043 (https://www.ncbi.nlm.nih.gov/pubmed/19338043?dopt=Abstract)OA (/index.php/File:OA-icon.png)] Genetic polymorphisms in

glutathione S-transferases and cytochrome P450s, tobacco smoking, and risk of non-Hodgkin lymphoma.

[PMID 19498054 (https://www.ncbi.nlm.nih.gov/pubmed/19498054?dopt=Abstract)  (/index.php/File:OA-icon.png)] Prenatal tobacco smoke exposure affects global and gene-specific DNA methylation.

[PMID 19568750 (https://www.ncbi.nlm.nih.gov/pubmed/19568750?dopt=Abstract)  (/index.php/File:OA-icon.png)] MRP2 and GSTP1 polymorphisms and chemotherapy response in advanced non-small cell lung cancer.

[PMID 19899130 (https://www.ncbi.nlm.nih.gov/pubmed/19899130?dopt=Abstract)] Polymorphisms of drug-metabolizing genes and risk of non-Hodgkin lymphoma.

[PMID 20049130 (https://www.ncbi.nlm.nih.gov/pubmed/20049130?dopt=Abstract) (/index.php/File:OA-icon.png)] Black carbon exposure, oxidative stress genes, and blood pressure in a repeated-measures study.

[PMID 20049212 (https://www.ncbi.nlm.nih.gov/pubmed/20049212?dopt=Abstract) (/index.php/File:OA-icon.png)] Traffic-related air pollution, oxidative stress genes, and asthma (ECHRS).

[PMID 20091863 (https://www.ncbi.nlm.nih.gov/pubmed/20091863?dopt=Abstract)] Genetic polymorphisms of MPO, GSTT1, GSTM1, GSTP1, EPHX1 and NQO1 as risk factors of early-onset lung cancer.

[PMID 20233420 (https://www.ncbi.nlm.nih.gov/pubmed/20233420?dopt=Abstract) (/index.php/File:OA-icon.png)] Cluster analysis in severe emphysema subjects using phenotype and genotype data: an exploratory investigation.

[PMID 20445800 (https://www.ncbi.nlm.nih.gov/pubmed/20445800?dopt=Abstract) (/index.php/File:OA-icon.png)] Genetic Polymorphisms in Genes Related to Oxidative Stress (GSTP1, GSTM1, GSTT1, CAT, MnSOD, MPO, eNOS) and Survival of Rectal Cancer Patients after Radiotherapy.

[PMID 20459744 (https://www.ncbi.nlm.nih.gov/pubmed/20459744?dopt=Abstract) (/index.php/File:OA-icon.png)] Cyclophosphamide-metabolizing enzyme polymorphisms and survival outcomes after adjuvant chemotherapy for node-positive breast cancer: a retrospective cohort study.

[PMID 20540773 (https://www.ncbi.nlm.nih.gov/pubmed/20540773?dopt=Abstract) (/index.php/File:OA-icon.png)] The 341C/T polymorphism in the GSTP1 gene is associated with increased risk of oesophageal cancer.

[PMID 20597111 (https://www.ncbi.nlm.nih.gov/pubmed/20597111?dopt=Abstract) (/index.php/File:OA-icon.png)] Effect of interactions of

glutathione S-transferase T1, M1, and P1 and HMOX1 gene promoter polymorphisms with heavy smoking on the risk of rheumatoid arthritis.

[PMID 20663217 (https://www.ncbi.nlm.nih.gov/pubmed/20663217?dopt=Abstract)  (/index.php/File:OA-icon.png)] Genetic Polymorphisms of CYP2E1, GSTP1, NQO1 and MPO and the Risk of Nasopharyngeal Carcinoma in a Han Chinese Population of Southern China.

[PMID 21595856 (https://www.ncbi.nlm.nih.gov/pubmed/21595856?dopt=Abstract)] Genetic polymorphisms in antioxidative enzymes are associated to forced expiratory volume in 1 s (FEV1) in smokers independently of asthma.

[PMID 21669193 (https://www.ncbi.nlm.nih.gov/pubmed/21669193?dopt=Abstract)] GSTP1 mRNA expression in human circulating blood leukocytes is associated with GSTP1 genetic polymorphism.

[PMID 21741876 (https://www.ncbi.nlm.nih.gov/pubmed/21741876?dopt=Abstract)] Polymorphisms in tobacco metabolism and DNA repair genes modulate oral precancer and cancer risk.

[PMID 22251241 (https://www.ncbi.nlm.nih.gov/pubmed/22251241?dopt=Abstract)] Role of glutathione S-transferases in melanoma susceptibility: association with GSTP1 rs1695 polymorphism.

[PMID 22475179 (https://www.ncbi.nlm.nih.gov/pubmed/22475179?dopt=Abstract)] Polymorphisms in genes encoding interleukin-10 and drug metabolizing enzymes GSTP1, GSTT1, GSTA1 and UGT1A1 influence risk and outcome in Hodgkin lymphoma.

[PMID 22525558 (https://www.ncbi.nlm.nih.gov/pubmed/22525558?dopt=Abstract)] Genetic polymorphisms involved in carcinogen metabolism and DNA repair and lung cancer risk in a Japanese population.

[PMID 22531667 (https://www.ncbi.nlm.nih.gov/pubmed/22531667?dopt=Abstract)] PM10-induced hospital admissions for asthma and chronic obstructive pulmonary disease: the modifying effect of individual characteristics.

[PMID 22661588 (https://www.ncbi.nlm.nih.gov/pubmed/22661588?dopt=Abstract)  (/index.php/File:OA-icon.png)] Antioxidant enzyme polymorphisms and neuropsychological outcomes in medulloblastoma survivors: a report from the Childhood Cancer Survivor Study.

[PMID 23136956 (https://www.ncbi.nlm.nih.gov/pubmed/23136956?dopt=Abstract)] The role of Glutathione S-Transferase (GST) and Claudin-1 (CLDN1) gene polymorphisms in contact sensitization: a cross-sectional study

[PMID 23146971 (https://www.ncbi.nlm.nih.gov/pubmed/23146971?dopt=Abstract)  (/index.php/File:OA-icon.png)] Glutathione-S-transferase (GST)

polymorphisms are associated with relapse after radical prostatectomy

[PMID 24083102 (https://www.ncbi.nlm.nih.gov/pubmed/24083102?dopt=Abstract)  (/index.php/File:OA-icon.png)] Associations between null mutations in GSTT1 and GSTM1, the GSTP1 Ile(105)Val polymorphism, and mortality in breast cancer survivors

[PMID 24367646 (https://www.ncbi.nlm.nih.gov/pubmed/24367646?dopt=Abstract)  (/index.php/File:OA-icon.png)] Novel single nucleotide polymorphism markers for low dose aspirin-associated small bowel bleeding

[PMID 24423050 (https://www.ncbi.nlm.nih.gov/pubmed/24423050?dopt=Abstract)  (/index.php/File:OA-icon.png)] Associations between GSTM1*0 and GSTA1*A genotypes with the risk of cardiovascular death among hemodialyses patients

[PMID 24453034 (https://www.ncbi.nlm.nih.gov/pubmed/24453034?dopt=Abstract)] Association study of SNPs of genes IFNGR1 (rs137854905), GSTT1 (rs71748309), and GSTP1 (rs1695) in gastric cancer development in samples of patient in the northern and northeastern Brazil

[PMID 24465030 (https://www.ncbi.nlm.nih.gov/pubmed/24465030?dopt=Abstract)  (/index.php/File:OA-icon.png)] GSTP1 and TNF Gene Variants and Associations between Air Pollution and Incident Childhood Asthma: The Traffic, Asthma and Genetics (TAG) Study

[PMID 24610081 (https://www.ncbi.nlm.nih.gov/pubmed/24610081?dopt=Abstract)] Associations Between SNPs Within Antioxidant Genes and the Risk of Prostate Cancer in the Siberian Region of Russia

[PMID 22487578 (https://www.ncbi.nlm.nih.gov/pubmed/22487578?dopt=Abstract)] Association of glutathione S-transferase pi isoform single-nucleotide polymorphisms with exudative age-related macular degeneration in a Chinese population.

[PMID 22517484 (https://www.ncbi.nlm.nih.gov/pubmed/22517484?dopt=Abstract)] Clinical significance of SOD2 and GSTP1 gene polymorphisms in Chinese patients with gastric cancer.

[PMID 22610343 (https://www.ncbi.nlm.nih.gov/pubmed/22610343?dopt=Abstract)  (/index.php/File:OA-icon.png)] Genetic variants in antioxidant genes are associated with diisocyanate-induced asthma.

[PMID 22735619 (https://www.ncbi.nlm.nih.gov/pubmed/22735619?dopt=Abstract)] Sample-to-SNP kit: a reliable, easy and fast tool for the detection of HFE p.H63D and p.C282Y variations associated to hereditary hemochromatosis.

[PMID 22868256 (https://www.ncbi.nlm.nih.gov/pubmed/22868256?dopt=Abstract)  (/index.php/File:OA-icon.png)] A prospective validation

pharmacogenomic study in the adjuvant setting of colorectal cancer patients treated with the 5-fluorouracil/leucovorin/oxaliplatin (FOLFOX4) regimen.

[PMID 23000097 (https://www.ncbi.nlm.nih.gov/pubmed/23000097?dopt=Abstract)] Polymorphisms of catechol estrogens metabolism pathway genes and breast cancer risk in Mexican women.

[PMID 23065688 (https://www.ncbi.nlm.nih.gov/pubmed/23065688?dopt=Abstract)  (/index.php/File:OA-icon.png)] Glutathione S-transferase P1 single nucleotide polymorphism predicts permanent ototoxicity in children with medulloblastoma.

[PMID 23175176 (https://www.ncbi.nlm.nih.gov/pubmed/23175176?dopt=Abstract)  (/index.php/File:OA-icon.png)] Variation in PAH-related DNA adduct levels among non-smokers: the role of multiple genetic polymorphisms and nucleotide excision repair phenotype.

[PMID 23333443 (https://www.ncbi.nlm.nih.gov/pubmed/23333443?dopt=Abstract)] Analysis of polymorphisms and haplotypes in genes associated with vascular tone, hypertension and oxidative stress in Mexican-Mestizo women with severe preeclampsia.

[PMID 23812950 (https://www.ncbi.nlm.nih.gov/pubmed/23812950?dopt=Abstract)] Pharmacogenetic influence of GST polymorphisms on anthracycline-based chemotherapy responses and toxicity in breast cancer patients: a multi-analytical approach.

[PMID 24786234 (https://www.ncbi.nlm.nih.gov/pubmed/24786234?dopt=Abstract)  (/index.php/File:OA-icon.png)] HapMap-based study on the association between MPO and GSTP1 gene polymorphisms and lung cancer susceptibility in Chinese Han population

[PMID 24902621 (https://www.ncbi.nlm.nih.gov/pubmed/24902621?dopt=Abstract)] Deletion polymorphism of GSTT1 gene as protective marker for allergic rhinitis

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Risk	Rs1695(G;G) (/index.php/Rs1695(G;G))
Alt	Rs1695(G;G) (/index.php/Rs1695(G;G))
Reference	Rs1695(A;A) (/index.php/Rs1695(A;A))
Significance	Drug-response

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[PMID 28152281 (https://www.ncbi.nlm.nih.gov/pubmed/28152281?dopt=Abstract)] Glutathione-S-transferase P1 may predispose children to a decline in pulmonary function after stem cell transplant.

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Disease	fluorouracil and oxaliplatin response - Efficacy (/index.php/Special:FormEdit/ClinVar_Disease/fluorouracil_and_oxaliplatin_response_-_Efficacy) cyclophosphamide and epirubicin response - Efficacy (/index.php/Special:FormEdit/ClinVar_Disease/cyclophosphamide_and_epirubicin_response_-_Efficacy) Platinum compounds response - Toxicity/ADR (/index.php/Special:FormEdit/ClinVar_Disease/Platinum_compounds_response_-_Toxicity/ADR) Colorectal Neoplasms (/index.php/Special:FormEdit/ClinVar_Disease/Colorectal_Neoplasms)
Variation	info (http://www.ncbi.nlm.nih.gov/variation/view/?q=rs1695)
Gene	GSTP1 (/index.php/GSTP1)
CLNDBN	fluorouracil and oxaliplatin response - Efficacy cyclophosphamide and epirubicin response - Efficacy, Toxicity/ADR Platinum compounds response - Toxicity/ADR Colorectal Neoplasms
Reversed HGVS	0 NC_000011.9:g.67352689A>G
CLNSRC	PharmGKB Clinical Annotation (/index.php?title=PharmGKB_Clinical_Annotation&action=edit&redlink=1)
CLNACC	RCV000211146.1 (http://www.ncbi.nlm.nih.gov/clinvar/RCV000211146.1), RCV000211269.1 (http://www.ncbi.nlm.nih.gov/clinvar/RCV000211269.1), RCV000211325.1 (http://www.ncbi.nlm.nih.gov/clinvar/RCV000211325.1), RCV000437330.1 (http://www.ncbi.nlm.nih.gov/clinvar/RCV000437330.1),

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