Supplemental references

[1] Seidegård J, Pero RW, Miller DG, et al. A glutathione transferase in human leukocytes as a marker for the susceptibility to lung cancer. Carcinogenesis 1986;7:751–3.

[2] Seidegård J, Pero RW, Markowitz MM, et al. Isoenzyme(s) of glutathione transferase (class Mu) as a marker for the susceptibility to lung cancer: a follow up study. Carcinogenesis 1990;11:33–6.

[3] Zhong S, Howie AF, Ketterer B, et al. Glutathione S-transferase mu locus: use of genotyping and phenotyping assays to assess association with lung cancer susceptibility. Carcinogenesis 1991;12:1533–7.

[4] Heckbert SR, Weiss NS, Hornung SK, et al. Glutathione S-transferase and epoxide hydrolase activity in human leukocytes in relation to risk of lung cancer and other smoking-related cancers. J Natl Cancer Inst 1992;84:414–22.

[5] Hayashi S, Watanabe J, Kawajiri K. High susceptibility to lung cancer analyzed in terms of combined genotypes of P450IA1 and Mu-class glutathione S-transferase genes. Jpn J Cancer Res 1992;83:866–70.

[6] Hirvonen A, Hugafvel-Pursiainen K, Anttila S, et al. The frequency of glutathione-S-transferase M1 null genotype in relation to gender, age and smoking status. Cancer Epidemiol Control 1997;6:544–554.

[7] Brockmoller J, Kerb R, Draulans N, et al. Genotype and phenotype of glutathione S-transferase class mu isoenzymes mu and psi in lung cancer patients and controls. Cancer Res 1993;53:1004–11.

[8] Nakachi K, Imai K, Hayashi S, et al. Polymorphisms of the CYP1A1 and glutathione S-transferase genes associated with susceptibility to lung cancer in relation to cigarette dose in a Japanese population. Cancer Res 1993;53:2994–9.

[9] Nazar-Stewart V, Motulsky AG, Eaton DL, et al. The glutathione S-transferase mu polymorphism as a marker for susceptibility to lung carcinoma. Cancer Res 1993;53:2313–8.

[10] Katoh T. [The frequency of glutathione-S-transferase M1 (GSTM1) gene deletion in patients with lung and oral cancer]. Sangyo Igaku 1994;36:435–9.

[11] Alexandre AK, Sundberg M, Seidegård J, et al. Genetic susceptibility to lung cancer with special emphasis on CYP1A1 and GSTM1: a study on host factors in relation to age at onset, gender and histological cancer types. Carcinogenesis 1994;15:1785–90.

[12] Kihara M, Kihara M, Noda K. Lung cancer risk of GSTM1 null genotype is dependent on the extent of tobacco smoke exposure. Carcinogenesis 1994;15:415–8.

[13] London SJ, Daly AK, Cooper J, et al. Polymorphism of glutathione S-transferase M1 and lung cancer risk among African-Americans and Caucasians in Los Angeles County, California. J Natl Cancer Inst 1995;87:1246–53.

[14] Nakajima T, Elowara E, Anttila S, et al. Expression and polymorphism of glutathione S-transferase in human lungs: risk factors in smoking-related lung cancer. Carcinogenesis 1995;16:707–11.

[15] Kihara M, Noda K, Kihara M. Distribution of GSTM1 null genotype in relation to gender, age and smoking status in Japanese lung cancer patients. Pharmacogenetics 1995;5:S74–9.

[16] Kihara M, Kihara M, Noda K. Risk of smoking for squamous and small cell carcinomas of the lung modulated by combinations of CYP1A1 and GSTM1 gene polymorphisms in a Japanese population. Carcinogenesis 1995;16:2331–6.

[17] Katoh T. [Application of molecular biology to occupational health field—the frequency of gene polymorphism of cytochrome P450 1A1 and glutathione S-transferase M1 in patients with lung, oral and uterine cancer]. J UOEH 1995;17:271–8.

[18] To-Figueras J, Gene M, Gomez-Catalan J, et al. Glutathione-S-Transferase M1 and codon 72 p53 polymorphisms in a northwestern Mediterranean population and their relation to lung cancer susceptibility. Cancer Epidemiol Biomarkers Prev 1996;5:337–42.

[19] Moreira A, Martins G, Monteiro MJ, et al. Glutathione S-transferase mu polymorphism and susceptibility to lung cancer in the Portuguese population. Teratog Carcinog Mutagen 1996;16:707–11.

[20] Ge H, Lam WK, Lee J, et al. Analysis of L-myc and GSTM1 genotypes in Chinese non-small cell lung carcinoma patients. Lung Cancer 1996;15:355–66.

[21] Deakin M, Elder J, Hendrickse C, et al. Glutathione S-transferase GSTT1 genotypes and susceptibility to cancer: studies of interactions with GSTM1 in lung, oral, gastric and colorectal cancers. Carcinogenesis 1996;17:881–84.

[22] el-Zein R, Zwischenberger JB, Wood TG, et al. Combined genetic polymorphism and risk for development of lung cancer. Mutat Res 1997;381:189–200.

[23] Jourenkova N, Reinikainen M, Bouchardy C, et al. Effects of glutathione S-transferases GSTM1 and GSTT1 genotypes on lung cancer risk in smokers. Pharmacogenetics 1997;7:515–8.

[24] To-Figueras J, Gomez C, Gomez-Catalan J, et al. Glutathione S-transferase M1 (GSTM1) and T1 (GSTT1) polymorphisms and lung cancer risk among Northwestern Mediterraneans. Carcinogenesis 1997;18:1529–33.

[25] Harrison DJ, Cantlay AM, Rae F, et al. Frequency of glutathione S-transferase M1 deletion in smokers with emphysema and lung cancer. Hum Exp Toxicol 1997;16:356–60.

[26] Kelsey KT, Spitz MR, Zuo ZF, et al. Polymorphisms in the glutathione S-transferase class mu and theta genes interact and increase susceptibility to lung cancer in minority populations (Texas, United States). Cancer Causes Control 1997;8:554–9.

[27] Garcia-Closas M, Kelsey KT, Wienczek JK, et al. A case-control study of cytochrome P450 1A1, glutathione S-transferase M1, cigarette smoking and lung cancer susceptibility (Massachusetts, United States). Cancer Causes Control 1997;8:544–53.

[28] Ryberg D, Skaug V, Hewart A, et al. Genotypes of glutathione transferase M1 and P1 and their significance for lung DNA adduct levels and cancer risk. Carcinogenesis 1997;18:1285–9.

[29] Li WY, Lai BT, Zhang XP. The relationship between genetic polymorphism of metabolizing enzymes and the genetic susceptibility to lung cancer. Chin J Epidemiol 2004;25:1042–5.
Sun GF, Shimojo N, Pi JB, et al. Gene deficiency of glutathione S-transferase mu isoform associated with susceptibility to lung cancer in a Chinese population. Cancer Lett 1997;113:169–72.

Salagovic J, Kalina I, Stubna J, et al. Genetic polymorphism of glutathione S-transferases M1 and T1 as a risk factor in lung and bladder cancers. Neoplasma 1998;45:312–7.

Hong YS, Chang JH, Kwon OJ, et al. Polymorphism of the CYP1A1 and glutathione-S-transferase gene in Korean lung cancer patients. Exp Mol Med 1998;30:192–8.

Benhamou S, Reinikainen M, Bouchardy C, et al. Association between lung cancer and microsomal epoxide hydrolase genotypes. Cancer Res 1998;58:5291–5.

Le Marchand L, Sivaraman L, Pierce L, et al. Associations of CYP1A1, GSTM1, and CYP2E1 polymorphisms with lung cancer suggest cell type specificities to tobacco carcinogens. Cancer Res 1998;58:4858–63.

Nyberg F, Hou SM, Hemminki K, et al. Glutathione S-transferase mu1 and N-acetyltransferase 2 genetic polymorphisms and exposure to tobacco smoke in nonsmoking and smoking lung cancer patients and population controls. Cancer Epidemiol Biomarkers Prev 1998;7:875–83.

Saarikoski ST, Voho A, Reinikainen M, et al. Combined effect of polymorphic GST genes on individual susceptibility to lung cancer. Int J Cancer 1998;77:516–21.

Jourenkova-Mironova N, Wikman H, Bouchardy C, et al. Role of glutathione S-transferase P1 polymorphism in modulating susceptibility to smoking-related lung cancer. Pharmacogenetics 1998;8:495–502.

Stücker I, de Waziers I, Cencé S, et al. GSTM1, smoking and lung cancer: a case-control study. Int J Epidemiol 1999;28:829–35.

Gao Y, Zhang Q. Polymorphisms of the GSTM1 and CYP2D6 genes associated with susceptibility to lung cancer in Chinese. Mutat Res 1999;444:441–9.

To-Figueras J, Gené M, Gómez-Catalón J, et al. Genetic polymorphism of glutathione S-transferase P1 gene and lung cancer risk. Cancer Causes Control 1999;10:65–70.

Persson I, Johansson I, Lou YC, et al. Genetic polymorphism of xenobiotic metabolizing enzymes among Chinese lung cancer patients. Int J Cancer 1999;81:325–9.

Katoh T, Kaneko S, Takasawa S, et al. Human glutathione S-transferase P1 polymorphism and susceptibility to smoking related epithelial cancer: oral, lung, gastric, colorectal and uterine cancer. Pharmacogenetics 1999;9:165–9.

Kihara M, Kihara M, Noda K. Lung cancer risk of the GSTM1 null genotype is enhanced in the presence of the GSTP1 mutated genotype in male Japanese smokers. Cancer Lett 1999;137:53–60.

Kiyohara C, Yamamura KI, Nakashiy Y, et al. Polymorphism in GSTM1, GSTT1, and GSTP1 and Susceptibility to Lung Cancer in a Japanese Population. Asian Pac J Cancer Prev 2000;1:293–8.

Dresler CM, Fratelli C, Babb J, et al. Gender differences in genetic susceptibility for lung cancer. Lung Cancer 2000;30:153–60.

London SJ, Yuan JM, Chung FL, et al. Isothiocyanates, glutathione S-transferase M1 and T1 polymorphisms, and lung-cancer risk: a prospective study of men in Shanghai, China. Lancet 2000;356:724–9.

Ford JG, Li Y, O’Sullivan MM, et al. Glutathione S-transferase M1 polymorphism and lung cancer risk in African-Americans. Carcinogenesis 2000;21:1971–5.

Stücker I, Jacquet M, de Waziers I, et al. Relation between inducibility of CYP1A1, GSTM1 and lung cancer in a French population. Pharmacogenetics 2000;10:617–27.

Malats N, Camus-Radon AM, Nyberg F, et al. Lung cancer risk in nonsmokers and GSTM1 and GSTT1 genetic polymorphism. Cancer Epidemiol Biomarkers Prev 2000;9:827–33.

Wang N, Wu YJ, Zhou XL, et al. Association between genetic polymorphism of metabolizing enzymes and DNA repairing enzymes and the susceptibility of lung cancer in Hanen population. JOURNAL OF HYGIENE RESEARCH 2012;41:251–6.

Hou SM, Ryberg D, Fält S, et al. GSTM1 and NAT2 polymorphisms in operable and non-operable lung cancer patients. Carcinogenesis 2000;21:49–54.

Spitz MR, Duhorner CM, Detry MA, et al. Dietary intake of isothiocyanates: evidence of a joint effect with glutathione S-transferase polymorphisms in lung cancer risk. Cancer Epidemiol Biomarkers Prev 2000;9:1017–20.

Cheng YW, Chen CY, Lin P, et al. DNA adduct level in lung tissue may act as a risk biomarker of lung cancer. Eur J Cancer 2000;36:1381–8.

Belogubova EV, Togo AV, Kondratiyeva TV, et al. GSTM1 genotypes in elderly tumour-free smokers and non-smokers. Lung Cancer 2000;29:189–95.

Lan Q, He X, Costa DJ, et al. Indoor coal combustion emissions, GSTM1 and GSTT1 genotypes, and lung cancer risk: a case-control study in Xuan Wei, China. Cancer Epidemiol Biomarkers Prev 2000;9:605–8.

Liu G, Miller DP, Zhou W, et al. Differential association of the codon 72 p53 and GSTM1 polymorphisms on histological subtype of non-small cell lung carcinoma. Cancer Res 2001;61:8718–22.

Risch A, Wikman H, Thiel S, et al. Glutathione-S-transferase M1, M3, T1 and P1 polymorphisms and susceptibility to non-small-cell lung cancer subtypes and hamartomas. Pharmacogenetics 2001;11:757–64.

Quíones L, Lucas D, Godoy J, et al. CYP1A1, CYP2E1 and GSTM1 genetic polymorphisms. The effect of single and combined genotypes on lung cancer susceptibility in Chilean people. Cancer Lett 2001;174:35–44.

Zhao B, Seow A, Lee EJ, et al. Dietary isothiocyanates, glutathione S-transferase -M1, -T1 polymorphisms and lung cancer risk among Chinese women in Singapore. Cancer Epidemiol Biomarkers Prev 2001;10:1063–7.

Chen SQ, Xue KX, Xu L, et al. Polymorphisms of the CYP1A1 and GSTM1 genes in relation to individual susceptibility to lung carcinoma in Chinese population. Mutat Res 2001;458:41–7.

Hou SM, Fält S, Yang K, et al. Differential interactions between GSTM1 and NAT2 genotypes on aromatic DNA
and HPRT mutant frequency in lung cancer patients and population controls. Cancer Epidemiol Biomarkers Prev 2001;10:133–40.

[62] Benhamou S, Vohov A, Bouchardy C, et al. Role of NAD(P)H:quinone oxidoreductase polymorphism at codon 187 in susceptibility to lung, laryngeal and oral/pharyngeal cancers. Biomarkers 2001;6:440–47.

[63] Gsur A, Haidinger G, Hollaus P, et al. Genetic polymorphisms of CYP1A1 and GSTM1 and lung cancer risk. Anticancer Res 2001;21:2237–42.

[64] Hou SM, Fält S, Nyberg F. Glutathione S-transferase T1-null genotype interacts synergistically with heavy smoking on lung cancer risk. Environ Mol Mutagen 2001;38:83–6.

[65] Qian BY, Han HW, Gu F, et al. Case-Control Study Genetic Polymorphism in CYP1A1 and GSTM1 and Smoking and Susceptibility to Lung Cancer. Chin J Clin Oncol 2006;33:500–2.

[66] Liu Q, Liu J, Song B, et al. Relationship between susceptibility to lung cancer and genetic polymorphism in CYP1A1 and GSTM1. Shandong Medical Journal 2008;48:32–4.

[67] Perera FP, Mooney LA, Stampler M, et al. Associations between carcinogen-DNA damage, glutathione S-transferase genotypes, and risk of lung cancer in the prospective Physicians’ Health Cohort Study. Carcinogenesis 2002;23:1641–6.

[68] Stüberk I, Hirvonen A, DeWaziers I, et al. Genetic polymorphisms of glutathione S-transferases as modulators of lung cancer susceptibility. Carcinogenesis 2002;23:1475–81.

[69] Lewis SJ, Cherry NM, Niven RM, et al. GSTM1, GSTT1 and GSTP1 polymorphisms and lung cancer risk. Cancer Lett 2002;180:165–71.

[70] Sunaga N, Kohno T, Yanagatani N, et al. Contribution of the NQO1 and GSTT1 polymorphisms to lung adenocarcinoma susceptibility. Cancer Epidemiol Biomarkers Prev 2002;11:730–8.

[71] Miller DP, Liu G, De Vivo I, et al. Contribution of the NQO1 and GSTT1 polymorphisms to lung adenocarcinoma susceptibility. Cancer Epidemiol Biomarkers Prev 2002;11:730–8.

[72] Lu W, Xing D, Qi J, et al. Genetic polymorphism in myeloperoxidase but not GSTM1 is associated with risk of lung squamous cell carcinoma in a Chinese population. Int J Cancer 2002;102:275–9.

[73] Reszka E, Wawowicz W, Rydzynski K, et al. Glutathione S-transferase M1 and P1 metabolic polymorphism and lung cancer predisposition. Neoplasma 2003;50:357–62.

[74] Cajus-Salazar N, Sierra-Torres CH, Salama SA, et al. Combined effect of MPO, GSTM1 and GSTT1 polymorphisms on chromosome aberrations and lung cancer risk. Int J Hyg Environ Health 2003;206:473–83.

[75] Wang J, Deng Y, Chong J, et al. GST genetic polymorphisms and lung adenocarcinoma susceptibility in a Chinese population. Cancer Lett 2002;180:185–93.

[76] Pinarbası H, Silig Y, Cetinkaya O, et al. Strong association between the GSTM1-null genotype and lung cancer in a Turkish population. Cancer Genet Cyogenet 2003;146:125–9.

[77] Dalyla NA, Miyakis S, Georgatou N, et al. Genetic polymorphisms of CYP1A1, GSTM1 and GSTT1 genes and lung cancer risk. Oncol Rep 2003;10:1829–35.

[78] Tsai YY, McGlynn KA, Hu Y, et al. Genetic susceptibility and dietary patterns in lung cancer. Lung Cancer 2003;41:269–81.

[79] Kiyohara C, Wakai K, Mikami H, et al. Risk modification by CYP1A1 and GSTM1 polymorphisms in the association of environmental tobacco smoke and lung cancer: a case-control study in Japanese nonsmoking women. Int J Cancer 2003;107:139–44.

[80] Wang J, Deng Y, Li L, et al. Association of GSTM1, CYP1A1 and CYP2E1 genetic polymorphisms with susceptibility to lung adenocarcinoma: a case-control study in Chinese population. Cancer Sci 2003;94:448–52.

[81] Nazarczewski V, Vaughan TL, Stapleton P, et al. A population-based study of glutathione S-transferase M1, T1 and P1 genotypes and risk for lung cancer. Lung Cancer 2003;40:247–58.

[82] Hung RJ, Boiffetta P, Brockmoller J, et al. CYP1A1 and GSTM1 genetic polymorphisms and lung cancer risk in Caucasian non-smokers: a pooled analysis. Carcinogenesis 2003;24:875–82.

[83] Taioli E, Gaspari L, Benhamou S, et al. Polymorphisms in CYP1A1, GSTM1, GSTT1 and GSTP1 genes and lung cancer below the age of 45 years. Int J Epidemiol 2003;32:60–3.

[84] Lin P, Hsu, YM, Ko JL, et al. Analysis of NQO1, GSTP1, and MnSOD genetic polymorphisms on lung cancer risk in Taiwan. Lung Cancer 2003;40:123–9.

[85] Wang Y, Spititz MR, Schabath MB, et al. Association between glutathione S-transferase p1 polymorphisms and lung cancer risk in Caucasians: a case-control study. Lung Cancer 2003;40:25–32.

[86] Miller DP, De Vivo I, Neuberg D, et al. Association between self-reported environmental tobacco smoke exposure and lung cancer: modification by GSTP1 polymorphism. Int J Cancer 2003;104:758–63.

[87] Oztürk O, Isbir T, Yuylim I, et al. GST M1 and CYP1A1 gene polymorphism and daily fruit consumption in Turkish patients with non-small cell lung carcinomas. In Vivo 2003;17:625–32.

[88] Ruano-Ravina A, Figueras A, Loidi L, et al. GSTM1 and GSTT1 polymorphisms, tobacco and risk of lung cancer: a case-control study from Galicia, Spain. Anticancer Res 2003;23:4333–7.

[89] Miller DP, Neuberg D, de Vivo I, et al. Smoking and the risk of lung cancer: susceptibility with GSTP1 polymorphisms. Epidemiology 2003;14:545–51.

[90] Wang JJ, Giovannucci EL, Hunter D, et al. Dietary intake of Cruciferous vegetables, Glutathione S-transferase (GST) polymorphisms and lung cancer risk in a Caucasian population. Cancer Causes Control 2004;15:977–985.

[91] Vincis P, Veglia F, Antilla S, et al. CYP1A1, GSTM1 and GSTT1 polymorphisms and lung cancer: a pooled analysis of gene-gene interactions. Biomarkers 2004;9:298–305.

[92] Sotiriou C, Sharma S, Joshi A, et al. Genetic polymorphism of the CYP1A1, CYP2E1, GSTM1 and GSTT1 genes and lung cancer susceptibility in a north indian population. Mol Cell Biochem 2004;266:1–9.

[93] Habalouv V, Sallow J, Kalina I, et al. Combined analysis of polymorphisms in glutathione S-transferase M1 and microsomal epoxide hydroxylase in lung cancer patients. Neoplasma 2004;51:352–7.
genetic polymorphisms of GSTs in Slovak population. Neoplasma 2012;59:160–7.

[157] Ada AO, Kunak SC, Hancer F, et al. Association between GSTM1, GSTT1, and GSTP1 polymorphisms and lung cancer risk in a Turkish population. Mol Biol Rep 2012;39(5):5985–93.

[158] Li W, Yue W, Zhang L, et al. Polymorphisms in GSTM1, CYP1A1, CYP2E1, and CYP2D6 are associated with susceptibility and chemotherapy response in non-small-cell lung cancer patients. Lung 2012;190:91–8.

[159] López-Cima MF, Alvarez-Avellón SM, Pascual T, et al. Genetic polymorphisms in CYP1A1, GSTM1, GSTP1 and GSTT1 metabolic genes and risk of lung cancer in Asturias. BMC Cancer 2012;12:433.

[160] Liu D, Wang F, Wang Q, et al. Association of glutathione S-transferase M1 polymorphisms and lung cancer risk in a Chinese population. Clin Chim Acta 2012;414:188–90.

[161] Vural B, Yakar F, Derin D, et al. Evaluation of glutathione S-transferase P1 polymorphisms (Ile105Val and Ala114Val) in patients with small cell lung cancer. Genet Test Mol Biomarkers 2012;16:701–6.

[162] Pliarchopoulou K, Voutsinas G, Papaoxinis G, et al. Correlation of CYP1A1, GSTP1 and GSTM1 gene polymorphisms and lung cancer risk among smokers. Oncol Lett 2012;3:1301–6.

[163] Shukla RK, Tilak AR, Kumar C, et al. Associations of CYP1A1, GSTM1 and GSTT1 polymorphisms with lung cancer susceptibility in a Northern Indian population. Asian Pac J Cancer Prev 2013;14:3345–9.

[164] Shukla RK, Kant S, Mittal B, et al. Comparative study of GST polymorphism in relation to age in COPD and lung cancer. Tuberk Toraks 2013;61:275–282.

[165] Pan C, Zhu G, Yan Z, et al. Glutathione-S-transferase (GSTM1, GSTT1) null phenotypes and risk of lung cancer in a Korean population. Asian Pac J Cancer Prev 2013;14:7165–9.

[166] Ihsan R, Chauhan PS, Mishra AK, et al. Copy number polymorphism of glutathione-S-transferase genes (GSTM1 & GSTT1) in susceptibility to lung cancer in a high-risk population from north-east India. Indian J Med Res 2014;139:720–9.

[167] Zhang H, Wu X, Xiao Y, et al. Genetic polymorphisms of glutathione S-transferase M1 and T1, and evaluation of oxidative stress in patients with non-small cell lung cancer. Eur J Med Res 2014;19:67.

[168] Bag A, Bag N, Jeena LM, et al. Glutathione S-transferase T1 and myeloperoxidase -463 G>A genotypes in lung cancer patients of karunakar region. J Nat Sci Biol Med 2014;5:293–6.

[169] Pan C, Zhu G, Yan Z, et al. Glutathione S-transferase T1 and M1 polymorphisms are associated with lung cancer risk in a gender-specific manner. Oncol Res Treat 2014;37:164–9.

[170] Jiang XY, Chang FH, Bai TY, et al. Susceptibility of Lung Cancer with Polymorphisms of CYP1A1, GSTM1, GSTM3, GSTT1 and GSTP1 Genotypes in the Population of Inner Mongolia Region. Asian Pac J Cancer Prev 2014;15:5207–14.

[171] Sharma N, Singh A, Singh N, et al. Genetic polymorphisms in GSTM1, GSTT1 and GSTP1 genes and risk of lung cancer in a North Indian population. Cancer Epidemiol 2015;39:947–55.

[172] Mota P, Silva HC, Soares MJ, et al. Genetic polymorphisms of phase I and phase II metabolic enzymes as modulators of lung cancer susceptibility. J Cancer Res Clin Oncol 2015;141:851–60.

[173] Wang Y, Ren BU, Zhang L, et al. Correlation between metabolic enzyme GSTP1 polymorphisms and susceptibility to lung cancer. Exp Ther Med 2015;10:1521–7.

[174] Peddreddy V, Badabagni SP, Gundimeda SD, et al. Association of CYP1A1, GSTM1 and GSTT1 gene polymorphisms with risk of non-small cell lung cancer in Andhra Pradesh region of South India. Eur J Med Res 2016;21:17.

[175] Masood N, Taseer B, Yasmin A, et al. Association of GSTM1 and GSTT1 deletion with lung cancer development in Pakistani population. J Cancer Res Ther 2016;12:731–4.

[176] Girdhar Y, Singh N, Behera D, et al. Combinations of the Variant Genotypes of CYP1A1, GSTM1 and GSTT1 are Associated with an Increased Lung Cancer Risk in North Indian Population: a Case-Control Study. Pathol Oncol Res 2016;22:647–52.

[177] Ada AO, Bilgen S, Karacaoaglan V, et al. Association between the TP53 and CYP2E1*5B gene polymorphisms and non-small cell lung cancer. Arh Hig Rada Toksikol 2016;67:311–6.

[178] Liu HX, Li J, Ye BG. Correlation between gene polymorphisms of CYP1A1, GSTP1, ERCC2, XRCC1, and XRCC3 and susceptibility to lung cancer. Genet Mol Res 2016;15.

[179] Wang Z, Feng F, Zhou X, et al. Development of diagnostic model of lung cancer based on multiple tumor markers and data mining. Oncotarget 2017;8:94793–804.

[180] Chen H, Yu ZC, Jin YT, et al. Influence of genetic polymorphism of CYP1A1 gene and GSTM1 gene on lung cancer. J shandong Med 2008;48:20–2.

[181] Minina VI, Soboleva OA, Glushkov AN, et al. Polymorphisms of GSTM1, GSTT1, GSTP1 genes and chromosomal aberrations in lung cancer patients. J Cancer Res Clin Oncol 2017;143:2235–43.

[182] He Q, Wang L, Zhang J, et al. CYP2E1 and GSTM1 gene polymorphisms, environmental factors, and the susceptibility to lung cancer. J Clin Lab Anal 2018;32:22403.

[183] Lv XL, Chang FH, Yin Q, et al. Associations of genetic polymorphisms of GSTP1 and CYP1A1 with susceptibility to lung cancer. Chin J public Health 2013;29:169–72.

[184] Wang OM, Lu QF, Zhen HN, et al. Relationship between CYP2C9 and GSTM1 genetic polymorphism and lung cancer susceptibility. Canc Res Prev Treat 2006;33:8–10.

[185] Gao JR, Ren CL, Zhang Q. CYP2D6 and GSTM1 genetic polymorphism and lung cancer susceptibility. Chinese Journal of Oncology 1998;20:185–6.

[186] Shi Y, Zhou XW, Zhou YK, et al. Analysis of CYP2E1, GSTM1 genetic polymorphisms in relation to human lung cancer and esophageal carcinoma. J Huazhong Univ Sci Tech [Health Sci] 2002;1:14–7.

[187] Ma DY, Du GB, Tan BX, et al. Study on genetic polymorphism of GSTM1 and GSTT1 related with susceptibility to lung cancer in the population of northern Sichuan of China. Journal of Cancer Control and Treatment 2013;26:136–9.
Wang N, Wu YM, Wu YJ, et al. Study on GSTM1 and GSTT1 gene deletion with lung cancer genetic susceptibility. Journal of Hygiene Research 2004;33:586–8.

Yao W, Wang N, Wu YJ, et al. Relationship between deletion of GSTM1, GSTT1 genes and susceptibility to lung cancer. Chin J Public Health 2006;22:1070–2.

Gao JR, Zhang Q. Study on the relationship between GSTM1 polymorphism and lung cancer susceptibility. Carcinogenesis Teratogenesis and Mutagenesis 1998;10:149–51.

Liu AS, Guo LH, Wen Y, et al. Study the correlation of GSTM1 and CYP2E1 gene polymorphism and genetic susceptibility to non-small cell lung cancer in Shenzhen area. J Clin Transfus Lab Med 2017;19:260–4.

Li DR, Zhou QH, Yuan TZ, et al. Study on the association between genetic polymorphism of CYP2E1, GSTM1 and susceptibility of lung cancer. Chin J lung cancer 2005;8:14–9.

Zhang JK, Hu YL, Hu CF, et al. Study on genetic polymorphisms of GSTM1 and GSTT1 related with inherent susceptibility to lung cancer in women. China Public Health 2002;18:273–5.

Ye WY, Chen Q, Chen SD. Study on relationship between GSTM1 polymorphism, diet factors and lung cancer. Chin J Public Health 2004;20:1120–1.

Du GB, Ma DY, Tan BX, et al. Relationship between genetic polymorphism of GSTM1 gene and susceptibility to lung cancer in the population of northern Sichuan of China. Chinese Clinical Oncology 2011;16:602–5.

Lu QF, Chen Y, Bai M. Association between susceptibility of lung cancer and genetic polymorphism of GSTM1. Journal of Clinical Pulmonary Medicine 2008;13:1444–5.

Lu QG. Association between GSTM1 polymorphism and susceptibility of lung cancer. Capital Medicine 2013;6:25–7.

Lei FM, Li SF, Zhou WD, et al. A case-control study of the impact of glutathione S-transferase M1 polymorphism on the risk of lung cancer. Modern Preventive Medicine 2007;34:724–6.

Han RL, Bai TY, Chang FH, et al. GSTM1 gene polymorphism and lung cancer susceptibility in Man population. Central South Pharmacy 2012;10:1–3.

Yao ZG, Er Y, Wang HY. The impacted effects between Glutathione S-Transferase gene polymorphism and smoking in lung cancer. Chin J Med Guide 2012;14:185–8.

Qiao GB, Sun CS, Li LS, et al. A case-control study on relationship between absence of GSTM1 gene, smoking and susceptibility to non-small cell lung cancer. J Fourth Milmed Univ 2005;26:1008–10.

Chen M, Chen SD, Wang BG. A case-control study of GSTT1 polymorphism and susceptibility of lung cancer. Journal of Zhengzhou University (Medical Sciences) 2006;41:1061–3.

Cao YF, Chen HC. A case-control study of GSTP1 polymorphism and lung cancer susceptibility. Journal of Changzh Medical College 2005;19:86–9.

Tao J, Han ZQ, Ma L, et al. Relationship between GSTP1 genetic polymorphism and susceptibility of lung cancer in Xinjiang Uygurs and Hans. Journal of Practical Oncology 2014;29:542–6.

Yuan TZ, Zhou QH, Zhu W, et al. Relationship between genetic polymorphism of GSTT1 gene and inherent susceptibility to lung cancer in Han population in Sichuan, China. Chin J Lung Cancers 2005;8:107–11.

Liu JN, Zhou CZ, Po HM, et al. Relationship between GSTT1 genetic polymorphism and smoking and lung cancer susceptibility. Basic & Clinical Medicine 2012;32:1194–7.

Bai TY, Chang FH, Wang MJ, et al. Relationship between CYP1A1 and GSTT1 polymorphisms and lung cancer susceptibility. Chin J Public Health 2011;27:723–5.

Wang YS, Jin YT, Xue SL, et al. Study on the methylation of P16 gene and genetic polymorphism of GSTM1 gene related with susceptibility to non-small cell lung cancer. Modern Preventive Medicine 2007;34:1207–9.

Wang J, Li SB. Relationship between XRCC1 and GSTM1 polymorphisms and lung cancer susceptibility. Chinese Journal of Gerontology 2016;36:6163–4.

Gu YF, Zhang SC, Lai BT, et al. Relationship between genetic polymorphism of metabolizing enzymes and lung cancer susceptibility. Chin J Lung Cancers 2004;7:112–7.

Qu YH, Shi YB, Zhong LJ, et al. The genotypes of cytochrome P450 1A1 and GSTM1 in non-smoking female lung cancer. Tumor 1998;18:80–2.

Li Y, Chen J, He X, et al. CYP1A1 and GSTM1 polymorphisms and susceptibility to lung cancer. Journal of Zhengzhou University (Medical Sciences) 2006;41:1061–4.

Luo CL, Chen Q, Cao WF, et al. Combined analysis of polymorphisms of GSTM1 and mutations of p53 gene in the patients with lung cancer. Chin J Clin Oncol 2004;31:1218–20, 24.

He DX, Chan Y. The relationship of GSTT1 polymorphism and Chromosome 15 Aberration in lung cancer patients. China Journal of Cancer Prevention and Treatment 2006;33:308–10.

Zhang TY, Wu YJ, Wang ZL, et al. Analysis of glutathione-s-transferase P1 polymorphism in patients with lung cancer. Journal of Zhengzhou University (Med Sci) 2006;41:448–51.

Luo CL, Chen Q, Cao WF. Analysis on genetic polymorphisms of GSTM1 in lung cancer patients and their first-degree relatives. Chin J Public Health 2005;21:786–7.

Zeng M, Chen SD, Xie CM, et al. Case-control study on relationship between lung cancer and its susceptibility marker. Chin J Public Health. 2005;21:771–4.

Wang N, Zhou F, Wu YJ, et al. The relationship between genetic polymorphism of four metabolizing enzymes and susceptibility to lung cancer. Modern Preventive Medicine 2012;39:4545–7.

Qi XS, Lv HM, Xia Y, et al. A primary case-control study on the relationship between genetic polymorphism of GSTM1 and lung cancer susceptibility to the people living in high radon-exposed area. Radiation Protection 2009;29:90–5.

Qi XS, Lv HM, Xia Y, et al. A primary case-control study on the relationship between genetic polymorphism of GSTT1 and lung cancer susceptibility to the people living in high radon-exposed area. Chin Occuo Med 2008;35:361–3, 7.
[221] Zhang HY, Wu XW, Xiao Y, et al. Genetic polymorphisms of Glutathione S-transferase M1 and T1 and evaluation of oxidative stress in patients with non-small cell lung cancer. Journal of China Medical University 2014;43:432–6.

[222] Zhang JK, Hu YL, Hu CF, et al. Study on genetic polymorphisms of GSTM1 and GSTT1 related with inherent susceptibility to lung cancer. Chinese Journal of Pathophysiology 2002;18:352–5.

[223] Li Y, Tang XY, Ma XT, et al. Glutathione S-transferase M1 polymorphisms and susceptibility to lung cancer. Journal of Medical Forum 2005;26:10–2.

[224] Xian XZ, Chen SD, Wang BG. The relationship between polymorphism of GSTM1 and susceptibility to lung cancer. Practical Preventive Medicine 2003;10:635–6.

[225] Lan Q, He XZ, Debra C, et al. Glutathione S-transferase GSTM1 and GSTT1 genotypes and susceptibility to lung cancer. Journal of Hygiene Research 1999:28:9–11.

[226] Zhang JQ, Long XY, Xiong GS, et al. The relationship between Glutathione S-transferase M1 and susceptibility to Xuanwei’s lung cancer. Journal of Kunming Medical University 2011;6:56–8.

[227] Huang XH, Chen SD, Wang BG, et al. Study on the impact of GSTM1 polymorphism on the risk of histologic types of lung cancer: a case-control study. J of Pub Health and Prev Med 2004;15:24–6.

[228] Fan J, Gan LG, Liang XM. Relationship of GSTM1 and GSTT1 polymorphisms with lung cancer susceptibility in GuangXi Zhuang population. Journal of Oncology 2010;16:922–5.

[229] Wang DQ, Chen SD, Wang BC, et al. A case-control study on relationship between lung cancer and genetic polymorphisms of CYP1A1, CYP2E1, and GSTM1 in Han nationality, in Guangzhou area. China Cancer 2006;15:579–82.

[230] Wang MJ, Chang FH, Yin Q, et al. Relationship of GSTM1 polymorphism and lung cancer susceptibility in Mongolian population. Chin J Public Health 2009;25:1447–9.

[231] Ai C. The effect of GSTM1 gene polymorphism on lung cancer risk. Contemporary Medicine. 2011;17:50.

[232] Chen LJ, Sun HL, Xu YQ. Study on the allele frequency of GSTM1 gene in normal Han population in Wannan area and the relationship between GSTM1 genotype and the risk of lung cancer. Acta Academiae Medicinae Wannan 2003;22:13–6.

[233] Li Y, Chen J, Gao YX. Influence of smoking and the polymorphisms of CYP1A1 and GSTM1 on the susceptibility of lung cancer. Journal of Chinese Practical Diagnosis and Therapy 2011;25:140–3.

[234] Song B, Liu J, Huang HY, et al. Effects of metabolic enzyme CYP1A1 and GSTM1 gene polymorphisms and smoking factors on the occurrence of male lung squamous cell carcinoma. Basic & Clinical Medicine 2010;30:1193–6.

[235] Chen SD, Zhen M, Li ZB, et al. A case-control study on the impact of CYP2E1 and GSTM1 polymorphisms on the risk of lung cancer. Tumor 2004;24:99–103.

[236] Chen SD, Liang XM. Genetic polymorphisms of CYP1A1 2D6 and GSTM1 related with susceptibility to lung cancer. Tumor 1998;18:269–71.

[237] Ye WY, Chen SD, Chen Q. Interaction between serum selenium level and polymorphism of GSTM1 in lung cancer. Acta Nutrimenta Sinica 2005;27:17–20.

[238] Zheng DJ, Feng H, Mei CR, et al. Association between GSTM1 genetic polymorphism and lung cancer risk by SYBR green I real-time PCR assay. Chin J Lung Cancer 2010;13:506–10.

[239] Chen SQ, Xu L, Ma GJ, et al. Identification of genetic polymorphism of CYP1A1 and GSTM1 in lung cancer patients by using allele-specific PCR and multiplex differential PCR. Carcinogenesis Teratogenesis and Mutagenesis 1999;11:119–21.

[240] Chen Y, Wang X, Wang XY, et al. A study of genetic polymorphism of GSTM1 gene in normal population and lung cancer population in Yunnan. Journal of Yunnan Normal University 2002;22:52–4.

[241] Xue KK, Xu L, Chen SQ, et al. Polymorphisms of the CYP1A1 and GSTM1 genes and their combined effects on individual susceptibility to lung cancer in a Chinese population. Chin J Med Genet 2001;18:125–7.

[242] Liang YG, Guo L, Liu Q, et al. Correlational research of the relationship between the genetic polymorphism of GSTM1 and GSTT1 in the Zhuang population and lung cancer. Acta Medicine Sinica 2012;25:813–7.

[243] Liang KY, Yu LP, Yin LH. Studies of the genes related to lung cancer susceptibility in Nanjing Han population, China. Yi Chuan 2004;26:584–8.

[244] Chen CM, et al. Effects of CYP1A1 and GSTM1 gene polymorphisms and BPDE-DNA adducts on lung cancer. Chin J of Med Genet 2012;29:23–7.

[245] Jia HS. Relationship between the genetic polymorphism of GSTT1 gene, smoking and different histological lung cancer susceptibility [D]. Yanbian University 2010;p1–30.

[246] Xia Y, et al. Polymorphisms of the cytochrome P450 and glutathiones-transferase genes associated with lung cancer susceptibility for the residents in high radon-exposed area. Chinese Journal of Pathophysiology 2009;34:63–6.

[247] Harris MJ, Coggan M, Langton L et al. Polymorphism of the Pi class glutathione S-transferase in normal populations and cancer patients. Pharmacogenetics 1998;8:27–31.

[248] Nie LH, Wang SY, Hu YL. Genetic polymorphism of glutathione S-transferase PI gene and susceptibility to lung cancer. Chinese Public Health 2002;18:791–2.

[249] Yue Z, Xu Q, Xu Y et al. GSTP1 gene polymorphism and susceptibility as well as chemotherapy sensitivity to non-small cell lung cancer. Chin J Cancer Prev Treat 2009;16:1441–4.

[250] Zhu XX, Hu CP, Gu QH. CYP1A1 polymorphisms, lack of glutathione S-transferase M1 (GSTM1), cooking oil fumes and lung cancer risk in non-smoking women. Zhonghua Jie He Hu Xi Za Zhi 2010;33:817–22.

[251] Cao YF, Chen HC, Liu XF, et al. Study on the relationship between the genetic polymorphisms of GSTM1 and GSTT1 genes and lung cancer susceptibility in the population of Hunan province of China. Life Sci Res
Zhang JK. Genetic polymorphisms of Glutathione S-transferase M1 and T1 gene related with the susceptibility to lung cancer [D]. Jinan University 2002;p1–79.

Zheng DJ. A case-control study on the relationship between CYP1A1、NAT2、GSTM1 polymorphisms and lung cancer susceptibility [D]. Tianjin Med Univ 2010;p1–44.

Chen CM. Metabolic enzymes gene polymorphisms and BPDE-DNA adducts with lung tumorigenesis [D]. Zhejiang University 2012;p1–49.

Bai TY. The study on the polymorphisms of GSTM1, GSTM3, GSTT1, GSTP1 genes and susceptibility to lung cancer in Mongolian population. Inner Mongolia Medical College 2011;p1–44.

Du GB. A study of relationship between genetic polymorphism of GSTM1 and GSTT1 gene and susceptibility to lung cancer in the population of northern Sichuan of China [D]. North Sichuan Medical College 2011;p1–53.

Zhu XX. CYP1A1 and GSTM1 polymorphisms and lung cancer risk in non-smoking women [D]. Central South University 2010;p1–48.
**Supplemental Table 1 General characteristics of studies included in pooling gene effects**

| First author/Year | Country       | Race           | Sample size | SC | Source of control | Type of control | Matching | Material |
|-------------------|---------------|----------------|-------------|----|-------------------|----------------|----------|----------|
| Seidegard[20] 1986 | USA           | Mixed          | 66/78       | HB | HB                | Cancer-free patients | ND       | Periph   |
| Seidegard[20] 1990 | USA           | Mixed          | 125/114     | HB | HB                | Cancer-free patients | ND       | Periph   |
| Zhong[2] 1991    | UK            | Mixed          | 228/225     | ND | HB and volunteers | Cancer-free patients | ND       | Periph   |
| Heckbert[23] 1992 | USA           | Caucasian      | 66/120      | CR | PB                | Healthy populations | Age and sex | Blood    |
| Hirvonen[24] 1993 | Finland       | Mixed          | 138/178     | HB | BD or volunteers  | Cancer-free controls | ND       | Periph   |
| Brockmoller[25] 1993 | Germany      | Caucasian      | 117/355     | HB | HB                | Cancer-free patients | ND       | Blood    |
| Nakach[26] 1993   | Japan         | Asian          | 85/170      | HB | PB                | Cancer-free patients | Age and sex | Periph   |
| Nazar-Stewart[27] 1993 | USA       | Mixed          | 35/43       | HB | HB                | Cancer-free patients | ND       | Lung c   |
| Katoh[28] 1994    | Japan         | Asian          | 53/91       | HB | Volunteers       | Healthy controls    | ND        | Periph   |
| London[29] 1995   | USA           | Caucasian      | 184/465     | PB | PB                | Cancer-free controls | Age        | Periph   |
| London[30] 1995   | USA           | African        | 158/251     | PB | PB                | Cancer-free controls | Age        | Periph   |
| Nakajima[31] 1995 | Finland       | Caucasian      | 27/11       | HB | HB                | Cancer-free patients | ND        | Blood    |
| Khara[32] 1995    | Japan         | Asian          | 447/469     | PB | PB                | Healthy controls    | Age and sex | Periph   |
| Katoh[33] 1995    | Japan         | Asian          | 33/88       | HB | Volunteers       | Healthy controls    | ND        | Periph   |
| Kawajiri[34] 1995 | Japan         | Asian          | 327/358     | PB | PB                | Healthy populations | Age and sex | Periph   |
| Cheng TF[35] 1995 | USA           | Mixed          | 78/78       | HB | HB                | ND                  | ND        | Periph   |
| Moreira[36] 1996  | Portugal      | Caucasian      | 94/84       | BD | BD                | Healthy controls    | ND        | Periph   |
| Ge[37] 1996       | China         | Asian          | 89/53       | HB | HB                | Cancer-free controls | ND        | Norma    |
| Deakin[38] 1996   | UK            | Caucasian      | 106/705     | HB | HB                | Cancer-free patients | ND        | Periph   |
| el-Zein[39] 1997  | USA           | Mixed          | 54/50       | PB | Volunteers       | Healthy controls    | Age and sex | Periph   |
| Harrison[40] 1997 | UK            | Caucasian      | 168/384     | ND | BD                | Healthy controls    | ND        | Norma    |
| Kelsey[41] 1997   | USA           | Mixed          | 60/146      | HB | Volunteers       | Healthy controls    | Age        | Periph   |
| Kelsey[42] 1997   | USA           | African        | 108/132     | HB | Volunteers       | Healthy controls    | Age        | Periph   |
| Garcia-Closas[43] 1997 | USA       | Mixed          | 416/446     | HB | HB                | ND                  | ND        | Blood    |
| Ryberg[44] 1997   | Norway        | Caucasian      | 135/342     | HB | Volunteers       | Healthy controls    | Sex        | Norma    |
| Sun[45] 1997      | China         | Asian          | 207/364     | HB | HB                | Out-patients        | ND         | Blood    |
| Salagovic[46] 1998 | Slovakia      | Caucasian      | 117/248     | PB | PB                | Healthy controls    | ND         | Blood    |
| Hong[47] 1998     | Korea         | Asian          | 85/63       | HB | HB                | ND                  | ND         | Blood    |
| Le Marchand[48] 1998 | USA          | Mixed          | 341/456     | PB | PB                | Cancer-free controls | Age and sex | Periph   |
| Nyberg[49] 1998   | Sweden        | Caucasian      | 185/164     | HB | HB                | Cancer-free controls | Age and sex | Blood    |
| Saarikoski[50] 1998 | Finland      | Caucasian      | 208/294     | BD | BD                | Healthy populations | ND         | Periph   |
| Jourenkova-Mironova[51] 1998 | France      | Caucasian      | 150/172     | HB | HB                | Cancer-free patients | ND         | Periph   |
| Gao JB[52] 1998   | China         | Asian          | 46/70       | HB | HB                | ND                  | ND         | Periph   |
| Qe YH[53] 1998    | China         | Asian          | 182/179     | ND | ND                | ND                  | Age and sex | Periph   |
| Hu YL[54] 1998    | China         | Asian          | 59/59       | HB | HB                | Cancer-free patients | ND         | Periph   |
| Harris MF[55] 1998 | Australia     | Mixed          | 184/199     | HB | HB                | ND                  | ND         | Blood    |
| Tang DL[56] 1998  | China         | Asian          | 136/115     | HB | HB                | Cancer-free patients | ND         | Periph   |
| Gao Y[57] 1999    | China         | Asian          | 59/132      | HB | HB                | Cancer-free controls | Age and sex | Periph   |
| To-Figuera[58] 1999 | Spain         | Caucasian      | 164/332     | HB | Volunteers       | Healthy controls    | ND         | Periph   |
| Persson[59] 1999  | China         | Asian          | 76/122      | ND | ND                | Healthy controls    | ND         | Blood    |
| Katoh[60] 1999    | Japan         | Asian          | 47/122      | HB | Volunteers       | Healthy controls    | ND         | Periph   |
| Khara[61] 1999    | Japan         | Asian          | 382/257     | HB | HB                | Healthy controls    | Sex        | Periph   |
| Butkiewicz[62] 1999 | Poland       | Caucasian      | 165/325     | PB | Volunteers       | Healthy controls    | ND         | Lung n   |
| Woodson[63] 1999  | Finland       | Caucasian      | 319/333     | PB | PB                | ND                  | Age and sex | Periph   |
| Kiyohara[64] 2000 | Japan         | Asian          | 86/88       | HB | Volunteers       | Healthy controls    | Sex        | Periph   |
| Dreseler[65] 2000 | USA           | Mixed          | 180/163     | HB | HB and Community | Healthy controls    | ND         | The w1    |
| London[66] 2000   | China         | Asian          | 232/114     | PB | PB                | Cancer-free controls | Age and sex | Periph   |
| Foed[67] 2000     | USA           | African        | 117/120     | HB | CR                | Cancer-free patients | ND         | Periph   |
| Malats[68] 2000   | Multiple       | Caucasian      | 122/121     | HB | HB                | Healthy controls    | ND         | The w1    |
| Hou[69] 2000      | Norway        | Caucasian      | 282/375     | HB | Volunteers       | Healthy controls    | Sex        | Norma    |
| Spitz[70] 2000    | USA           | Caucasian      | 503/465     | HB | HB                | ND                  | Age and sex | Blood    |
| Cheng YW[71] 2000 | China         | Asian          | 73/33       | HB | HB                | Cancer-free controls | ND         | Norma    |
| Lan[72] 2000      | China         | Asian          | 122/122     | HB | PB                | ND                  | Age and sex | Buccal   |
| Liu[73] 2001      | USA           | Mixed          | 1,168/1,256 | HB | HB                | ND                  | ND         | Periph   |
| Risch[74] 2001    | Germany       | Caucasian      | 389/353     | HB | HB                | Cancer-free patients | ND         | Venous   |
| Quiñones[75] 2001 | Chile         | Mixed          | 61/122      | HB | ND                | Healthy controls    | ND         | Periph   |
| Zhao[76] 2001     | Singapore      | Asian          | 233/187     | HB | HB                | Cancer-free patients | Age        | Periph   |
| Chen SQ[77] 2001  | China         | Asian          | 106/106     | HB | PB                | Healthy controls    | Age and sex | Whole    |
| Hou[78] 2001      | Sweden        | Caucasian      | 185/164     | HB | PB                | Healthy controls    | Age and sex | Blood    |
| Gujar[79] 2001    | Austria        | Caucasian      | 134/134     | HB | HB                | Cancer-free patients | Age        | Blood    |
| Study | Country | Ethnicity | Sex | Age | Tissues | Controls | Additional Details |
|-------|---------|-----------|-----|-----|---------|----------|-------------------|
| Hor et al. [58] 2001 | Sweden | Caucasian | 184/162 | HB | PB | Healthy controls | Age and sex Blood |
| Perera et al. [57] 2002 | USA | Caucasian | 89/173 | PB | PB | Cancer-free controls | Age and sex Blood |
| Stucke et al. [56] 2002 | France | Caucasian | 251/268 | HB | HB | Cancer-free controls | Age and sex Blood |
| Lewis [55] 2002 | UK | Caucasian | 94/165 | HB | HB | Cancer-free patients | ND Blood |
| Sunagawa [50] 2002 | Japan | Asian | 198/152 | HB | HB | Cancer-free patients | ND Whole |
| Miller et al. [51] 2002 | USA | Caucasian | 767/927 | HB | HB | Cancer-free controls | ND Blood |
| Liu [52] 2002 | China | Asian | 314/320 | HB | PB | Healthy controls | Age and sex Periph |
| Zhang L et al. [123] 2002 | China | Asian | 65/60 | HB | HB | Cancer-free patients | ND Periph |
| Shi Y [106] 2002 | China | Asian | 120/120 | HB | HB | Cancer-free patients | ND Whole |
| Chan Y [284] 2002 | China | Asian | 56/99 | HB | Volunteers | Healthy controls | ND Periph |
| Nie LH [285] 2002 | China | Asian | 158/168 | HB | HB | Healthy controls | Age and sex Periph |
| Sgambato [264] 2002 | Italy | Caucasian | 13/100 | HB | HB | Healthy controls | ND Periph |
| Zhang JK [286] 2002 | China | Asian | 161/165 | HB | Volunteers | Healthy controls | Age and sex Periph |
| Cajas-Salazar [4] 2003 | USA | Caucasian | 110/119 | HB | HB | Cancer-free patients | Age and sex Periph |
| Wang [47] 2003 | China | Asian | 112/119 | HB | HB | Cancer-free controls | Age and sex Periph |
| Pinarbas [287] 2003 | Turkey | Caucasian | 101/206 | HB | HB | Healthy controls | ND Blood |
| Dialynas [277] 2003 | Greece | Caucasian | 122/178 | HB | HB | Healthy controls | ND Whole |
| Tsai [79] 2003 | USA | Mixed | 235/94 | HB | HB | Healthy controls | ND Whole |
| Kiyohara [80] 2003 | Japan | Asian | 158/259 | HB | HB | Cancer-free patients | Age and Sex Whole |
| Wang [46] 2003 | China | Asian | 164/181 | HB | HB | Cancer-free controls | Age and sex Periph |
| Nazar-Stewart [81] 2003 | USA | Mixed | 274/500 | PB | PB | ND | Age and sex Whole |
| Hung [82] 2003 | Multiple | Caucasian | 284/1,433 | HB + PB | HB + PB | Cancer-free controls | ND Blood |
| Taioli [83] 2003 | Multiple | Caucasian | 261/1,452 | HB + PB | HB + PB | Cancer-free controls | ND Blood |
| Lin [44] 2003 | China | Asian | 198/332 | HB | HB | Cancer-free controls | ND Blood |
| Wang Y [83] 2003 | USA | Caucasian | 362/419 | HB | HB | Healthy controls | Age and Sex Whole |
| Oztürk [84] 2003 | Turkey | Caucasian | 55/60 | HB | HB | Healthy controls | Age Blood |
| Ruano-Ravina [85] 2003 | Spain | Caucasian | 132/187 | HB | HB | Cancer-free patients | ND Blood |
| Chen L [53] 2003 | China | Asian | 38/99 | HB | ND | Healthy controls | ND Periph |
| Wang S [288] 2003 | China | Asian | 97/71 | HB | HB | Cancer-free patients | ND Blood |
| Wang L [2] 2004 | USA | Caucasian | 716/939 | HB | HB | ND | ND Periph |
| Vines [91] 2004 | Multiple | Caucasian | 1,967/2,719 | HB + PB | HB + PB | Cancer-free controls | ND Blood |
| Sobol [289] 2004 | India | Indian | 100/76 | HB | PB | Healthy controls | ND Periph |
| Habalova [290] 2004 | Slovak | Caucasian | 121/150 | HB | HB | Healthy controls | ND Periph |
| Yang XR [291] 2004 | China | Asian | 186/139 | PB | PB | ND | Age and sex Whole |
| Chan-Young [40] 2004 | China | Asian | 229/197 | HB | PB | Healthy controls | ND Venous |
| Yang P [97] 2004 | USA | Mixed | 237/234 | HB | PB | Cancer-free controls | ND Blood |
| Alexandri [289] 2004 | Sweden | Caucasian | 524/530 | HB | HB and volunteers | Cancer-free controls | ND Blood |
| Belogoubova [90] 2004 | Russia | Caucasian | 167/663 | ND | HB | Cancer-free controls | ND Periph |
| Schneider [100] 2004 | Germany | Caucasian | 446/622 | HB | HB | Cancer-free controls | ND Whole |
| Gallegos [92] 2003-2004 | Mexico | Mixed | 52/178 | HB | ND | Healthy controls | ND Periph |
| Dong CT [109] 2004 | China | Asian | 82/91 | HB | HB | Cancer-free patients | ND Periph |
| Wang N [108] 2004 | China | Asian | 77/107 | HB | HB | Healthy controls | ND Periph |
| Ye WY [104] 2004 | China | Asian | 58/62 | HB | HB | Cancer-free patients | ND Venous |
| Gu YF [105] 2004 | China | Asian | 180/224 | HB | HB and volunteers | Cancer-free controls | ND Periph |
| Liao CL [213] 2004 | China | Asian | 63/47 | HB | HB | Cancer-free patients | ND Norma |
| Huang XH [273] 2004 | China | Asian | 91/138 | HB | HB | Cancer-free patients | Age and sex Venous |
| Cao Y [202] 2004 | China | Asian | 104/205 | HB | HB | ND | Age and sex Venous |
| Li WY [29] 2004 | China | Asian | 217/200 | HB | HB | Cancer-free patients | ND Venous |
| Li Y [282] 2004 | China | Asian | 103/138 | HB | Volunteers | Healthy controls | Age and sex Periph |
| Sreeja [104] 2005 | India | Indian | 146/146 | HB | HB | Healthy controls | ND Whole |
| Chan EC [200] 2005 | China | Asian | 75/162 | ND | HB | Cancer-free controls | Age and sex Norma |
| Adonis [100] 2005 | Chile | Mixed | 57/103 | HB | HB | Healthy controls | ND ND |
| Raimondi [107] 2005 | Multiple | Caucasian | 531/1,981 | HB + PB | HB + PB | Cancer-free controls | ND Blood |
| Raimondi [107] 2005 | Multiple | Asian | 93/210 | HB + PB | HB + PB | Cancer-free controls | ND Blood |
| Skuladottir [105] 2005 | Denmark | Caucasian | 320/618 | HB + PB | HB + PB | Healthy controls | Age and sex Periph |
| Wenzlaff [205] 2005 | USA | Caucasian | 135/151 | PB | PB | ND | Age and sex Blood, |
| Wenzlaff [205] 2005 | USA | African | 31/30 | PB | PB | ND | Age and sex Blood, |
| Cote [109] 2005 | USA | Caucasian | 230/287 | PB | PB | ND | Age and sex Blood, |
| Cote [109] 2005 | USA | African | 90/119 | PB | PB | ND | Age and sex Blood, |
| Brennan [206] 2005 | Multiple | Caucasian | 2,141/2,168 | HB + PB | HB + PB | ND | Age and sex Blood, |
| Li DR [72] 2005 | China | Asian | 99/66 | HB | HB | Cancer-free patients | ND Venous |
| Qiao GB [200] 2005 | China | Asian | 213/199 | HB | HB | Healthy controls | ND Periph |
| Author     | Year | Country | Ethnicity | Case Number | Control Number | Control Type | Disease Status | Age and Sex | Blood Type |
|------------|------|---------|-----------|-------------|----------------|--------------|----------------|-------------|------------|
| Hua F      | 2010 | China   | Asian     | 266/307     | HB             | Healthy controls | Age and sex   | Periph     |
| Zheng DJ   | 2010 | China   | Asian     | 266/307     | HB             | Healthy controls | Age and sex   | Periph     |
| Zhu XX     | 2010 | China   | Asian     | 160/166     | HB             | Cancer-free controls | Sex          | Periph     |
| Tamaki     | 2011 | Japan   | Asian     | 192/203     | HB             | Cancer-free controls | Age and sex   | Periph     |
| Kohno      | 2011 | Japan   | Asian     | 377/325     | HB             | Cancer-free controls | ND          | Whole      |
| Young      | 2011 | New Zealand | Caucasian | 454/1,157 | HB            | Cancer-free controls | ND          | Whole      |
| Singh      | 2011 | India   | Indian    | 200/200     | HB             | Healthy controls | Age and sex   | Whole      |
| Zheng      | 2011 | China   | Asian     | 266/307     | HB             | Healthy controls | Age and sex   | Periph     |
| Zhu        | 2011 | China   | Asian     | 160/166     | HB             | Cancer-free controls | Age and sex   | Periph     |
| Tamaki     | 2011 | Japan   | Asian     | 192/203     | HB             | Cancer-free controls | Age and sex   | Periph     |
| Kohno      | 2011 | Japan   | Asian     | 377/325     | HB             | Cancer-free controls | ND          | Whole      |
| Young      | 2011 | New Zealand | Caucasian | 454/1,157 | HB            | Cancer-free controls | ND          | Whole      |
| Singh      | 2011 | India   | Indian    | 200/200     | HB             | Healthy controls | Age and sex   | Whole      |
| Zhikai     | 2012 | Turkey  | Caucasian | 218/238     | HB             | Healthy controls | ND          | Periph     |
| Dzian      | 2012 | Slovak  | Caucasian | 230/290     | HB + Volunteers | Cancer-free controls | ND          | Periph     |
| Adi         | 2012 | Turkey  | Caucasian | 213/231     | HB             | Cancer-free controls | ND          | Whole      |
| Lopez-Cima | 2012 | Austria | Caucasian | 789/789     | HB             | Cancer-free patients | Age and sex   | Periph     |
| Liu D      | 2012 | China   | Asian     | 360/360     | HB             | Healthy controls | Age and sex   | Whole      |
| Vural       | 2012 | Turkey  | Caucasian | 89/108      | HB             | Cancer-free patients | ND          | Whole      |
| Pliarchopoulou | 2012 | Greece  | Caucasian | 100/125     | HB             | Healthy controls | ND          | Blood      |
| Wang N     | 2012 | China   | Asian     | 209/256     | HB             | Healthy controls | Age and sex   | Venous     |
| Yao Z      | 2012 | China   | Asian     | 150/150     | HB             | Healthy controls | ND          | Venous     |
| Liang K    | 2012 | China   | Asian     | 68/70       | HB             | Cancer-free patients | ND          | Periph     |
| Chen CM    | 2012 | China   | Asian     | 200/200     | HB             | Cancer-free controls | ND          | Periph     |
| Shukla      | 2013 | India   | Indian    | 218/238     | HB             | Healthy controls | ND          | Periph     |
| Shukla      | 2013 | India   | Indian    | 218/204     | HB             | COPD          | ND          | Periph     |
| Piao        | 2013 | Korea   | Asian     | 3,933/1,699 | HB             | PB            | ND          | Periph     |
| Lu Q       | 2013 | China   | Asian     | 91/138      | HB             | ND            | ND          | Periph     |
| Zhang H    | 2014 | China   | Asian     | 110/100     | HB             | Volunteers   | Healthy controls | ND          | Blood      |
| Bai         | 2014 | India   | Indian    | 26/33       | HB             | Volunteers   | Healthy controls | ND          | Periph     |
| Pan         | 2014 | China   | Asian     | 623/623     | HB             | PB            | Healthy controls | Age and sex | Periph     |
| Jiang XY   | 2014 | China   | Asian     | 322/456     | HB             | PB            | Healthy controls | Age and sex | Whole      |
| Tao J      | 2014 | China   | Asian     | 160/160     | HB             | ND            | ND          | Periph     |
| Sharma     | 2015 | India   | Indian    | 270/270     | HB             | Cancer-free controls | Age and sex | Periph     |
| Mota        | 2015 | Portugal | Caucasian | 200/247     | HB             | Cancer-free controls | ND          | Periph     |
| Peddireddy | 2016 | India   | Indian    | 246/250     | HB             | Healthy controls | Age and sex   | Whole      |
| Masood      | 2016 | Pakistan | Indian    | 252/270     | ND             | Cancer-free controls | Age and sex | ND         |
| Girdhar     | 2016 | India   | Indian    | 320/320     | HB             | Cancer-free controls | Age and sex   | Periph     |
| Liu J      | 2016 | China   | Asian     | 308/253     | HB             | Volunteers   | Healthy controls | ND          | Blood      |
| Wang F     | 2016 | China   | Asian     | 150/150     | HB             | ND            | ND          | Venous     |
| Wang J     | 2017 | China   | Asian     | 200/200     | HB             | Healthy controls | ND          | Periph     |
| Minina      | 2017 | Russia  | Caucasian | 353/300     | HB             | Healthy controls | ND          | Periph     |
| Liu AS     | 2017 | China   | Asian     | 71/71       | HB             | Cancer-free controls | ND          | Venous     |
| He E       | 2018 | China   | Asian     | 313/330     | PB             | Healthy controls | Age and sex   | Blood      |

HB = hospital-based, PB = population-based, CR = cancer registry, ND = not described, BD = Blood donors
| First author/Year | Source of case | Source of control | Ascertainment of cancer | Ascertainment of control | Matching examination | Genotyping examination | Specimens used for determining genotypes |
|-------------------|----------------|------------------|-------------------------|--------------------------|----------------------|-----------------------|------------------------------------------|
| Seidegård [1] 1986 | 2              | 1                | 2                       | 1                        | 0                    | 0                     | 1                                        |
| Seidegård [2] 1990 | 2              | 1                | 2                       | 1                        | 0                    | 0                     | 1                                        |
| Zhong [3] 1991    | 0              | 1.5              | 0                       | 0                        | 0                    | 0                     | 1                                        |
| Heckbert [4] 1992 | 3              | 3                | 0                       | 1                        | 2                    | 1                     | 1                                        |
| Hirvonen [5] 1993 | 2              | 2                | 2                       | 0                        | 0                    | 0                     | 1                                        |
| Brokkmólle [7] 1993 | 2             | 1                | 2                       | 2                        | 0                    | 1                     | 1                                        |
| Nakachi [8] 1993  | 3              | 3                | 2                       | 1                        | 2                    | 0                     | 1                                        |
| Nazar-Stewart [9] 1993 | 2     | 1                | 2                       | 0                        | 0                    | 0                     | 1                                        |
| Katoh [10] 1994   | 2              | 2                | 2                       | 2                        | 0                    | 0                     | 1                                        |
| Alexandrie [11] 1994 | 2          | 2                | 2                       | 1                        | 0                    | 0                     | 1                                        |
| London [11] 1995  | 3              | 3                | 1                       | 1                        | 1                    | 1                     | 1                                        |
| London [11] 1995  | 3              | 3                | 1                       | 1                        | 0                    | 0                     | 1                                        |
| Nakajima [12] 1995 | 2              | 2                | 2                       | 1                        | 1                    | 0                     | 1                                        |
| Brockmöller [7] 1993 | 2             | 1                | 2                       | 2                        | 0                    | 1                     | 1                                        |
| Percal [13] 1995  | 2              | 3                | 2                       | 1                        | 2                    | 0                     | 1                                        |
| Nagai [14] 1995   | 2              | 3                | 2                       | 1                        | 2                    | 0                     | 1                                        |
| London [13] 1995  | 2              | 3                | 2                       | 1                        | 1                    | 2                     | 1                                        |
| London [13] 1995  | 2              | 3                | 1                       | 1                        | 2                    | 0                     | 1                                        |
| Nakajima [14] 1995 | 2              | 2                | 2                       | 1                        | 2                    | 0                     | 1                                        |
| Brockmöller [7] 1993 | 2             | 2                | 2                       | 1                        | 2                    | 0                     | 1                                        |
| Perka [21] 1995   | 2              | 1                | 2                       | 1                        | 2                    | 0                     | 1                                        |
| Moreira [22] 1996 | 2              | 1                | 2                       | 1                        | 0                    | 0                     | 1                                        |
| Ge [23] 1996      | 2              | 1                | 2                       | 1                        | 0                    | 0                     | 1                                        |
| Deakins [24] 1996 | 2              | 1                | 0                       | 1                        | 0                    | 0                     | 1                                        |
| el-Zein [25] 1997 | 2              | 2                | 1                       | 1                        | 1                    | 0                     | 1                                        |
| Harrison [26] 1997 | 0              | 0                | 1                       | 1                        | 0                    | 0                     | 1                                        |
| Kelsey [27] 1997  | 2              | 2                | 2                       | 1                        | 1                    | 2                     | 1                                        |
| Kelsey [27] 1997  | 2              | 2                | 2                       | 1                        | 1                    | 2                     | 1                                        |
| Garcia-Closas [28] 1997 | 2     | 1                | 2                       | 1                        | 0                    | 0                     | 1                                        |
| Ryberg [29] 1997  | 2              | 2                | 2                       | 1                        | 1                    | 0                     | 0                                        |
| Sun [30] 1997     | 2              | 1                | 2                       | 2                        | 1                    | 0                     | 1                                        |
| Salagovic [31] 1998 | 2          | 3                | 0                       | 1                        | 0                    | 0                     | 1                                        |
| Hong [32] 1998    | 2              | 1                | 2                       | 1                        | 0                    | 0                     | 1                                        |
| Le Marchand [33] 1998 | 3         | 3                | 2                       | 2                        | 1                    | 1                     | 1                                        |
| Nyberg [34] 1998  | 2              | 1                | 2                       | 1                        | 2                    | 0                     | 1                                        |
| Saarikoski [35] 1998 | 2          | 2                | 2                       | 2                        | 0                    | 0                     | 1                                        |
| Jourenkova-Mironova [36] 1998 | 2 | 1 | 2 | 1 | 0 | 0 | 1 |
| Gao JR [37] 1998  | 2              | 1                | 2                       | 0                        | 0                    | 0                     | 1                                        |
| Qu YH [38] 1998   | 0              | 0                | 0                       | 1                        | 2                    | 0                     | 1                                        |
| Hu YL [39] 1998   | 2              | 1                | 2                       | 1                        | 0                    | 0                     | 1                                        |
| Tang DL [40] 1998 | 2              | 1                | 2                       | 1                        | 0                    | 0                     | 1                                        |
| Gao [41] 1999     | 2              | 1                | 2                       | 1                        | 0                    | 0                     | 1                                        |
| To-Figueras [42] 1999 | 2       | 2                | 2                       | 1                        | 0                    | 0                     | 1                                        |
| Persson [43] 1999 | 0              | 0                | 1                       | 1                        | 0                    | 0                     | 1                                        |
| Kihara [44] 1999  | 2              | 1                | 2                       | 2                        | 1                    | 0                     | 1                                        |
| Butkiewicz [25] 1999 | 2          | 1                | 2                       | 1                        | 0                    | 1                     | 1                                        |
| Woodson [45] 1999 | 3              | 3                | 2                       | 0                        | 2                    | 1                     | 1                                        |
| Kiyohara [46] 2000 | 2              | 2                | 2                       | 1                        | 1                    | 1                     | 1                                        |
| Dresler [47] 2000 | 2              | 1                | 2                       | 1                        | 0                    | 0                     | 1                                        |
| London [48] 2000  | 3              | 3                | 2                       | 1                        | 1                    | 0                     | 1                                        |
| Ford [49] 2000    | 2              | 1                | 2                       | 1                        | 0                    | 1                     | 1                                        |
| Malat [50] 2000   | 2              | 1                | 2                       | 1                        | 0                    | 1                     | 1                                        |
| Hou [51] 2000     | 2              | 2                | 2                       | 1                        | 0                    | 1                     | 0                                        |
| Spitz [52] 2000   | 2              | 1                | 2                       | 1                        | 0                    | 1                     | 0                                        |
| Cheng [53] 2000   | 2              | 1                | 2                       | 1                        | 0                    | 0                     | 1                                        |
| Lan [54] 2000     | 2              | 3                | 1                       | 0                        | 2                    | 1                     | 1                                        |
| Liu [55] 2001     | 2              | 1                | 2                       | 0                        | 1                    | 1                     | 1                                        |
| Risch [56] 2001   | 2              | 1                | 2                       | 1                        | 0                    | 0                     | 1                                        |
| Quinones [57] 2001 | 2            | 0                | 2                       | 1                        | 0                    | 0                     | 1                                        |
| Zhao [58] 2001    | 2              | 1                | 2                       | 1                        | 1                    | 1                     | 1                                        |
| Chen [59] 2001    | 2              | 0                | 2                       | 1                        | 2                    | 0                     | 1                                        |
| Hou [60] 2001     | 2              | 3                | 0                       | 1                        | 2                    | 0                     | 1                                        |
| Gsur [61] 2001    | 2              | 1                | 2                       | 1                        | 0                    | 1                     | 1                                        |
| Hou [62] 2001     | 2              | 3                | 0                       | 1                        | 2                    | 0                     | 1                                        |
| Perera [63] 2002  | 3              | 3                | 2                       | 1                        | 2                    | 1                     | 1                                        |
| Sticker [64] 2002 | 2              | 1                | 2                       | 1                        | 0                    | 1                     | 1                                        |
| Lewis [65] 2002   | 2              | 1                | 2                       | 1                        | 0                    | 0                     | 1                                        |
| Sunaga [66] 2002  | 2              | 1                | 2                       | 1                        | 0                    | 0                     | 1                                        |
| Name          | Year | 2  | 1  | 2  | 1   | 0  | 1  | 1  |
|--------------|------|----|----|----|-----|----|----|----|
| Miller       | 2002 | 2  | 1  | 2  | 1  | 0  | 1  | 1  |
| Lu           | 2002 | 2  | 3  | 2  | 1  | 2  | 2  | 1  |
| Zhang LZ     | 2002 | 2  | 1  | 2  | 1  | 0  | 0  | 1  |
| Shi Y        | 2002 | 2  | 1  | 2  | 1  | 0  | 0  | 1  |
| Chan Y       | 2002 | 2  | 2  | 0  | 1  | 0  | 0  | 1  |
| Sgambato     | 2002 | 2  | 1  | 0  | 1  | 0  | 0  | 1  |
| Zhang JK     | 2002 | 2  | 2  | 2  | 2  | 2  | 0  | 1  |
| Cajas-Salazar| 2003 | 2  | 1  | 2  | 1  | 2  | 1  | 1  |
| Wang Z       | 2003 | 2  | 1  | 2  | 1  | 0  | 0  | 1  |
| Pinarbash    | 2003 | 2  | 1  | 2  | 1  | 0  | 0  | 1  |
| Dialyna      | 2003 | 2  | 1  | 2  | 1  | 0  | 0  | 1  |
| Tsai         | 2003 | 2  | 1  | 1  | 1  | 0  | 0  | 1  |
| Kiyohara     | 2003 | 2  | 1  | 2  | 1  | 2  | 0  | 1  |
| Wang         | 2003 | 2  | 1  | 2  | 1  | 2  | 0  | 1  |
| Nazar-Stewart| 2003 | 3  | 3  | 2  | 1  | 2  | 1  | 1  |
| Hung         | 2003 | 2  | 2  | 2  | 1  | 0  | 0  | 1  |
| Taioli       | 2003 | 2  | 2  | 2  | 1  | 0  | 0  | 1  |
| Oztürk       | 2003 | 2  | 1  | 2  | 1  | 1  | 1  | 1  |
| Ruano-Ravina | 2003 | 2  | 1  | 1  | 1  | 0  | 0  | 1  |
| Chen LJ      | 2003 | 2  | 0  | 2  | 1  | 0  | 0  | 1  |
| Wang S       | 2003 | 2  | 1  | 2  | 1  | 0  | 0  | 1  |
| Wang         | 2004 | 2  | 1  | 2  | 0  | 0  | 0  | 1  |
| Vines         | 2004 | 2  | 2  | 2  | 1  | 0  | 0  | 1  |
| Sobti        | 2004 | 2  | 3  | 0  | 1  | 0  | 0  | 1  |
| Habalová     | 2004 | 2  | 1  | 2  | 1  | 0  | 1  | 1  |
| Yang          | 2004 | 3  | 3  | 2  | 3  | 2  | 0  | 1  |
| Chan-Yeung    | 2004 | 2  | 3  | 2  | 1  | 0  | 0  | 1  |
| Yang         | 2004 | 2  | 3  | 2  | 1  | 0  | 0  | 1  |
| Alexandre     | 2004 | 2  | 2  | 2  | 1  | 0  | 0  | 1  |
| Belogubova    | 2004 | 2  | 1  | 2  | 0  | 0  | 1  | 1  |
| Schneider     | 2004 | 2  | 1  | 2  | 2  | 2  | 0  | 1  |
| Gallegos-Arreola | 2003-2004 | 2  | 0  | 2  | 1  | 0  | 0  | 1  |
| Dong C       | 2004 | 2  | 1  | 2  | 1  | 0  | 0  | 1  |
| Wang N       | 2004 | 2  | 1  | 2  | 1  | 0  | 0  | 1  |
| Ye W         | 2004 | 2  | 1  | 2  | 1  | 0  | 0  | 1  |
| Gu Y         | 2004 | 2  | 1  | 2  | 1  | 0  | 0  | 1  |
| Luo CL       | 2004 | 2  | 1  | 2  | 1  | 0  | 0  | 1  |
| Huang XH     | 2004 | 2  | 1  | 2  | 1  | 2  | 0  | 1  |
| Cao Y         | 2004 | 2  | 1  | 2  | 1  | 2  | 0  | 1  |
| Li W         | 2004 | 2  | 1  | 1  | 1  | 0  | 0  | 1  |
| Li Y          | 2004 | 2  | 2  | 2  | 1  | 2  | 2  | 1  |
| Sreeja        | 2005 | 2  | 1  | 2  | 1  | 0  | 1  | 1  |
| Chan         | 2005 | 0  | 1  | 0  | 1  | 2  | 0  | 1  |
| Adamson       | 2005 | 2  | 1  | 2  | 1  | 0  | 0  | 1  |
| Raimondi     | 2005 | 2  | 2  | 2  | 1  | 0  | 0  | 1  |
| Raimondi     | 2005 | 2  | 2  | 2  | 1  | 0  | 0  | 1  |
| Skuladottir  | 2005 | 2  | 2  | 2  | 1  | 2  | 0  | 1  |
| Wenzlaff      | 2005 | 3  | 3  | 2  | 2  | 0  | 2  | 1  |
| Wenzlaff      | 2005 | 3  | 3  | 2  | 0  | 2  | 1  | 0  |
| Cote          | 2005 | 3  | 3  | 2  | 0  | 2  | 1  | 0  |
| Cote          | 2005 | 3  | 3  | 2  | 0  | 2  | 1  | 0  |
| Brennan      | 2005 | 2  | 2  | 0  | 0  | 2  | 0  | 1  |
| Li DR        | 2005 | 2  | 1  | 2  | 1  | 0  | 0  | 1  |
| Qiao GB       | 2005 | 2  | 1  | 2  | 1  | 0  | 0  | 1  |
| Yuan T       | 2005 | 2  | 1  | 2  | 1  | 0  | 0  | 1  |
| Luo CL       | 2005 | 2  | 1  | 2  | 1  | 0  | 0  | 1  |
| Barnholtz-Sloan | 2005 | 3  | 3  | 1  | 0  | 2  | 0  | 1  |
| Barnholtz-Sloan | 2005 | 3  | 3  | 1  | 0  | 2  | 0  | 1  |
| Chou YC      | 2005 | 3  | 3  | 2  | 2  | 0  | 0  | 1  |
| Li DR        | 2005 | 2  | 1  | 2  | 1  | 0  | 0  | 1  |
| Liang GY     | 2005 | 2  | 1  | 2  | 1  | 2  | 1  | 1  |
| Lee          | 2006 | 2  | 1  | 2  | 2  | 1  | 1  | 1  |
| Chen         | 2006 | 2  | 1  | 2  | 2  | 2  | 1  | 1  |
| Pisan        | 2006 | 2  | 2  | 2  | 2  | 2  | 0  | 1  |
| Larsen       | 2006 | 2  | 1  | 2  | 2  | 0  | 0  | 1  |
| Qian         | 2006 | 2  | 0  | 2  | 1  | 1  | 0  | 0  |
| Chang FH     | 2006 | 2  | 1  | 2  | 1  | 0  | 0  | 1  |
| Wang QM      | 2006 | 2  | 1  | 2  | 1  | 0  | 0  | 1  |
| Author(s)          | Year | Issue1 | Issue2 | Issue3 | Issue4 | Issue5 | Issue6 | Issue7 |
|-------------------|------|--------|--------|--------|--------|--------|--------|--------|
| He DX[174]        | 2006 | 2      | 2      | 0      | 1      | 0      | 0      | 1      |
| Wang DQ[229]      | 2006 | 2      | 1      | 2      | 1      | 2      | 0      | 1      |
| Reszka[119]       | 2007 | 2      | 1      | 2      | 1      | 2      | 1      | 1      |
| Osawa[120]        | 2007 | 2      | 1      | 2      | 1      | 0      | 0      | 1      |
| Yang[121]         | 2007 | 2      | 1      | 2      | 1      | 0      | 0      | 1      |
| Sørensen[122]     | 2007 | 3      | 3      | 2      | 1      | 2      | 1      | 1      |
| Li SF[230]        | 2007 | 2      | 1      | 0      | 1      | 2      | 0      | 1      |
| Hu XG[234]        | 2007 | 2      | 1      | 2      | 2      | 2      | 0      | 1      |
| Shah[125]         | 2008 | 2      | 0      | 2      | 1      | 0      | 1      | 1      |
| Zienolddiny[130]  | 2008 | 2      | 3      | 2      | 1      | 2      | 0      | 1      |
| Sreeja[131]       | 2008 | 2      | 1      | 2      | 2      | 0      | 0      | 1      |
| Carpenter[132]    | 2009 | 2      | 3      | 2      | 1      | 2      | 0      | 1      |
| Zupa[133]         | 2009 | 2      | 1      | 2      | 1      | 0      | 0      | 1      |
| Lam[134]          | 2009 | 3      | 3      | 2      | 1      | 2      | 0      | 1      |
| Cote[135]         | 2009 | 3      | 3      | 2      | 1      | 2      | 1      | 1      |
| Kumar[136]        | 2009 | 2      | 0      | 0      | 1      | 0      | 0      | 1      |
| Qi XS[230]        | 2009 | 2      | 1      | 2      | 1      | 0      | 0      | 1      |
| Wang MJ[231]      | 2009 | 2      | 1      | 2      | 1      | 0      | 0      | 1      |
| Chen H[232]       | 2009 | 2      | 1      | 2      | 1      | 0      | 0      | 1      |
| Liu JN[233]       | 2009 | 2      | 1      | 2      | 1      | 0      | 0      | 1      |
| Yadav[137]        | 2010 | 2      | 1      | 2      | 1      | 2      | 1      | 1      |
| Jin[138]          | 2010 | 2      | 1      | 2      | 2      | 2      | 0      | 1      |
| Gervasini[145]    | 2010 | 2      | 1      | 2      | 2      | 2      | 0      | 1      |
| Timofeeva[146]    | 2010 | 2      | 3      | 0      | 2      | 2      | 1      | 1      |
| Cabral[144]       | 2010 | 2      | 2      | 2      | 1      | 0      | 0      | 1      |
| Cabral[144]       | 2010 | 2      | 2      | 2      | 1      | 0      | 0      | 1      |
| Altinisik[145]    | 2010 | 0      | 0      | 2      | 1      | 0      | 0      | 1      |
| Sreelekhrai[146]  | 2010 | 2      | 0      | 0      | 1      | 2      | 0      | 1      |
| Song B[130]       | 2010 | 2      | 1      | 2      | 2      | 0      | 0      | 1      |
| Zheng DX[237]     | 2010 | 2      | 1      | 2      | 1      | 2      | 1      | 1      |
| Zhu X[238]        | 2010 | 2      | 1      | 2      | 1      | 1      | 1      | 1      |
| Tamaki[148]       | 2011 | 2      | 1      | 2      | 1      | 2      | 0      | 1      |
| Kohno[149]        | 2011 | 2      | 1      | 2      | 2      | 2      | 0      | 1      |
| Young[150]        | 2011 | 2      | 1      | 2      | 2      | 2      | 0      | 1      |
| Singh[151]        | 2010-2011 | 2      | 0      | 2      | 1      | 2      | 1      | 1      |
| Ihsan[152]        | 2011 | 2      | 2      | 2      | 1      | 2      | 1      | 1      |
| Atinkaya[153]     | 2012 | 2      | 1      | 2      | 2      | 0      | 0      | 1      |
| Fowke[154]        | 2012 | 3      | 3      | 2      | 2      | 1      | 1      | 1      |
| Bai TY[239]       | 2011 | 2      | 1      | 2      | 1      | 2      | 0      | 1      |
| Zhang JQ[240]     | 2011 | 2      | 0      | 2      | 1      | 2      | 0      | 1      |
| Ai[81]            | 2011 | 2      | 1      | 2      | 0      | 0      | 0      | 1      |
| Zhou XL[271]      | 2011 | 2      | 1      | 2      | 1      | 0      | 2      | 1      |
| Bai TY[289]       | 2011 | 2      | 1      | 2      | 1      | 0      | 0      | 1      |
| Du GB[250]        | 2011 | 2      | 1      | 2      | 1      | 0      | 0      | 1      |
| Kiyohara[155]     | 2012 | 2      | 1      | 2      | 2      | 0      | 2      | 1      |
| Dziam[156]        | 2012 | 2      | 1      | 2      | 2      | 0      | 0      | 1      |
| Ada[157]          | 2012 | 2      | 1      | 2      | 2      | 0      | 2      | 1      |
| López-Cima[158]   | 2012 | 2      | 1      | 2      | 2      | 2      | 1      | 1      |
| Liu[160]          | 2012 | 2      | 3      | 2      | 2      | 2      | 1      | 1      |
| Pliarchopoulou[162] | 2012 | 2      | 1      | 2      | 2      | 0      | 0      | 1      |
| Wang[165]         | 2012 | 2      | 1      | 2      | 2      | 0      | 0      | 1      |
| Yao ZG[200]       | 2012 | 2      | 1      | 2      | 1      | 0      | 0      | 1      |
| Liang KC[242]     | 2012 | 2      | 1      | 2      | 1      | 0      | 0      | 1      |
| Chen CM[243]      | 2012 | 2      | 1      | 2      | 1      | 0      | 0      | 1      |
| Shukla[161]       | 2013 | 2      | 1      | 2      | 1      | 0      | 0      | 1      |
| Shukla[164]       | 2013 | 2      | 1      | 2      | 1      | 0      | 0      | 1      |
| Piao[165]         | 2013 | 2      | 3      | 2      | 1      | 0      | 0      | 1      |
| Name        | Year | Citation Count | CPT | NMT | VQA | ADE | CCQ |
|-------------|------|----------------|-----|-----|-----|-----|-----|
| Lu QG       | 2013 | 2              | 1   | 2   | 0   | 0   | 0   |
| Zhang       | 2014 | 2              | 2   | 2   | 1   | 0   | 0   |
| Bai         | 2014 | 2              | 2   | 0   | 1   | 0   | 1   |
| Pan         | 2014 | 2              | 3   | 2   | 2   | 0   | 1   |
| Jiang       | 2014 | 2              | 3   | 1   | 1   | 2   | 0   |
| Sharma      | 2015 | 2              | 1   | 1   | 2   | 2   | 2   |
| Mota        | 2015 | 2              | 1   | 2   | 2   | 0   | 1   |
| Peddireddy  | 2016 | 2              | 1   | 2   | 2   | 0   | 1   |
| Masood      | 2016 | 2              | 1   | 2   | 1   | 0   | 1   |
| Girdhar     | 2016 | 2              | 0   | 2   | 1   | 0   | 0   |
| Wang J      | 2017 | 2              | 2   | 0   | 1   | 0   | 0   |
| Wang J      | 2017 | 2              | 1   | 2   | 1   | 0   | 0   |
| Minima      | 2017 | 2              | 2   | 1   | 0   | 0   | 1   |
| Liu AS      | 2017 | 2              | 1   | 2   | 1   | 0   | 0   |
| He          | 2018 | 2              | 3   | 2   | 2   | 0   | 1   |
## Supplemental Table 3 Quality assessment by included studies of meta-analysis of GSTP1 Ile105Val polymorphism

| First author/Year | Source of case | Source of control | Ascertainment of cancer | Ascertainment of control | Matching | Genotyping examination | Specimens used for determining geno |
|-------------------|---------------|------------------|-------------------------|--------------------------|----------|------------------------|-------------------------------------|
| Ryberg [28] 1997  | 2             | 2                | 2                       | 1                        | 1        | 0                      | 0                                   |
| Saarikoski [36] 1998 | 2             | 2                | 2                       | 1                        | 0        | 0                      | 1                                   |
| Jourenkova-Mironova [37] 1998 | 2             | 1                | 2                       | 1                        | 0        | 0                      | 1                                   |
| Harris MJ [24] 1998 | 2             | 1                | 2                       | 0                        | 0        | 0                      | 1                                   |
| To-Figuera [40] 1999 | 2             | 2                | 2                       | 2                        | 0        | 0                      | 1                                   |
| Kato [42] 1999    | 2             | 1                | 2                       | 1                        | 1        | 0                      | 1                                   |
| Kiikara [43] 1999 | 2             | 1                | 2                       | 1                        | 0        | 0                      | 1                                   |
| Butkiewicz [259] 1999 | 2             | 1                | 2                       | 1                        | 0        | 0                      | 1                                   |
| Kiyohara [44] 2000 | 2             | 2                | 2                       | 1                        | 0        | 0                      | 1                                   |
| Risch [57] 2001   | 2             | 1                | 2                       | 1                        | 0        | 0                      | 1                                   |
| Perera [67] 2002  | 3             | 3                | 2                       | 1                        | 2        | 1                      | 1                                   |
| Sticker [68] 2002 | 2             | 1                | 2                       | 1                        | 2        | 0                      | 1                                   |
| Lewis [69] 2002   | 2             | 1                | 2                       | 1                        | 0        | 0                      | 1                                   |
| Nie LH [78] 2002  | 2             | 1                | 2                       | 1                        | 2        | 0                      | 1                                   |
| Wang [73] 2003    | 2             | 1                | 2                       | 1                        | 0        | 0                      | 1                                   |
| Tsai [81] 2003    | 2             | 1                | 1                       | 1                        | 0        | 0                      | 1                                   |
| Nazar-Stewart [41] 2003 | 3           | 3                | 2                       | 1                        | 2        | 1                      | 1                                   |
| Lin [84] 2003     | 2             | 1                | 2                       | 1                        | 0        | 0                      | 1                                   |
| Wang [85] 2003    | 2             | 1                | 2                       | 1                        | 2        | 0                      | 1                                   |
| Chan-Yeung [95] 2004 | 2           | 3                | 2                       | 1                        | 0        | 0                      | 1                                   |
| Yang [97] 2004    | 2             | 3                | 2                       | 1                        | 0        | 0                      | 1                                   |
| Schneider [100] 2004 | 2           | 1                | 2                       | 2                        | 0        | 0                      | 1                                   |
| Chan [102] 2005   | 0             | 1                | 1                       | 1                        | 0        | 0                      | 1                                   |
| Skudladdi [108] 2005 | 2           | 2                | 2                       | 1                        | 2        | 0                      | 1                                   |
| Wenzlaff [109] 2005 | 3           | 3                | 2                       | 0                        | 2        | 1                      | 0                                   |
| Wenzlaff [109] 2005 | 3           | 3                | 2                       | 0                        | 2        | 1                      | 0                                   |
| Cote [106] 2005   | 3             | 3                | 2                       | 0                        | 2        | 1                      | 0                                   |
| Cote [106] 2005   | 3             | 3                | 2                       | 0                        | 2        | 1                      | 0                                   |
| Cao YF [205] 2005 | 2             | 1                | 2                       | 1                        | 2        | 0                      | 1                                   |
| Guo ZL [278] 2005 | 2             | 1                | 2                       | 1                        | 0        | 0                      | 1                                   |
| Liang Y [127] 2005 | 2             | 1                | 2                       | 1                        | 2        | 0                      | 1                                   |
| Chen [114] 2006   | 2             | 1                | 2                       | 1                        | 2        | 1                      | 1                                   |
| Larsen [117] 2006 | 2             | 1                | 2                       | 2                        | 0        | 0                      | 1                                   |
| Miller [119] 2006 | 2             | 1                | 2                       | 1                        | 0        | 1                      | 1                                   |
| Zhang TV [125] 2006 | 2           | 1               | 2                       | 1                        | 2        | 0                      | 1                                   |
| Reszka [129] 2007 | 2             | 1                | 2                       | 1                        | 2        | 0                      | 1                                   |
| Yang [129] 2007   | 2             | 1                | 2                       | 1                        | 0        | 0                      | 1                                   |
| Sörensen [132] 2007 | 3           | 3                | 2                       | 1                        | 0        | 0                      | 1                                   |
| Loft [124] 2007   | 3             | 3                | 2                       | 1                        | 2        | 1                      | 1                                   |
| Sobri [127] 2008  | 2             | 1                | 2                       | 2                        | 0        | 0                      | 1                                   |
| Homma [128] 2008  | 2             | 2                | 2                       | 1                        | 0        | 0                      | 1                                   |
| Zienolddiny [130] 2008 | 2           | 3                | 2                       | 1                        | 2        | 0                      | 1                                   |
| Yoon [131] 2008   | 2             | 1                | 2                       | 1                        | 2        | 0                      | 1                                   |
| Sreeja [132] 2008 | 2             | 1                | 2                       | 1                        | 0        | 0                      | 1                                   |
| Mataková [133] 2009 | 2           | 2                | 2                       | 1                        | 2        | 2                      | 1                                   |
| Cote [138] 2009   | 3             | 3                | 2                       | 1                        | 2        | 1                      | 1                                   |
| Cote [138] 2009   | 3             | 3                | 2                       | 1                        | 2        | 1                      | 1                                   |
| Kumar [139] 2009  | 2             | 0                | 0                       | 1                        | 0        | 0                      | 1                                   |
| Yue Z [250] 2009  | 2             | 1                | 2                       | 0                        | 2        | 0                      | 1                                   |
| Yin Q [247] 2009  | 2             | 1                | 2                       | 1                        | 0        | 0                      | 1                                   |
| Yadav [140] 2010  | 2             | 1                | 2                       | 1                        | 2        | 1                      | 1                                   |
| Gervasi [142] 2010 | 2           | 1                | 2                       | 2                        | 2        | 0                      | 1                                   |
| Timofeeva [143] 2010 | 2           | 3                | 0                       | 2                        | 2        | 1                      | 1                                   |
| Lam [147] 2010    | 2             | 2                | 3                       | 1                        | 2        | 1                      | 1                                   |
| Hua F [276] 2010  | 2             | 1                | 2                       | 2                        | 2        | 1                      | 1                                   |
| Ihsan [152] 2011  | 2             | 2                | 2                       | 1                        | 2        | 1                      | 1                                   |
| Bai TY [129] 2011 | 2             | 1                | 2                       | 1                        | 0        | 0                      | 1                                   |
| Kiyohara [155] 2012 | 2           | 1                | 2                       | 2                        | 0        | 2                      | 1                                   |
| Dziar [156] 2012  | 2             | 1                | 2                       | 1                        | 0        | 0                      | 1                                   |
| Ada [137] 2012    | 2             | 1                | 2                       | 2                        | 0        | 2                      | 1                                   |
| López-Cim [139] 2012 | 2           | 1                | 2                       | 2                        | 2        | 2                      | 1                                   |
| Vural [143] 2012  | 2             | 1                | 2                       | 2                        | 0        | 0                      | 1                                   |
| Pliarchopoulou [162] 2012 | 2      | 1            | 2                       | 2                        | 0        | 0                      | 1                                   |
| Jiang [170] 2014  | 2             | 3                | 1                       | 1                        | 2        | 0                      | 1                                   |
| Tao J [204] 2014  | 2             | 1                | 2                       | 1                        | 0        | 0                      | 1                                   |
| Name     | Year | Value1 | Value2 | Value3 | Value4 | Value5 | Value6 | Value7 |
|----------|------|--------|--------|--------|--------|--------|--------|--------|
| Sharma   | 2015 | 2      | 1      | 2      | 2      | 2      | 2      | 1      |
| Mota     | 2015 | 2      | 1      | 2      | 2      | 0      | 1      | 1      |
| Liu      | 2016 | 2      | 2      | 2      | 1      | 0      | 0      | 1      |
| Minina   | 2017 | 2      | 1      | 2      | 1      | 0      | 0      | 1      |
Supplemental Table 4 Genotype frequencies of the *GSTM1*, *GSTT1*, and *GSTP1* IIe105Val polymorphisms between lung cancer and control groups

| First author/Year | Ethnicity | *GSTM1* genotype distribution | *GSTT1* genotype distribution | *GSTP1* IIe105Val genotype distribution |
|-------------------|-----------|-------------------------------|-------------------------------|----------------------------------------|
|                   |           | Case present | Control null | Case present | Control null | Case present | IIe | IIe |
| Seidegård[1] 1986 | Mixed     | 23           | 43            | 46           | 32           | NA           | NA | NA |
| Seidegård[2] 1990 | Mixed     | 47           | 78            | 66           | 48           | NA           | NA | NA |
| Zhong[3] 1991     | Mixed     | 130          | 98            | 131          | 94           | NA           | NA | NA |
| Heckbert[4] 1992  | Caucasian  | 24           | 42            | 50           | 70           | NA           | NA | NA |
| Hirvonen[6] 1993  | Mixed     | 65           | 73            | 100          | 78           | NA           | NA | NA |
| Brockmölle[7] 1993 | Caucasian | 55           | 62            | 174          | 181          | NA           | NA | NA |
| Nakachi[8] 1993   | Asian     | 33           | 52            | 86           | 84           | NA           | NA | NA |
| Nazar-Stewart[9] 1993 | Mixed | 9           | 26            | 23           | 20           | NA           | NA | NA |
| Katoh[10] 1994    | Asian     | 26           | 27            | 53           | 38           | NA           | NA | NA |
| London[13] 1995   | Caucasian | 90           | 94            | 221          | 244          | NA           | NA | NA |
| London[13] 1995   | African   | 114          | 44            | 183          | 68           | NA           | NA | NA |
| Nakajima[14] 1995 | Caucasian | 16           | 11            | 6            | 5            | NA           | NA | NA |
| Kiharal[15] 1995  | Asian     | 197          | 250           | 241          | 228          | NA           | NA | NA |
| Katoh[17] 1995    | Asian     | 18           | 15            | 53           | 35           | NA           | NA | NA |
| Kawajir[256] 1995 | Asian     | 144          | 183           | 191          | 167          | NA           | NA | NA |
| Cheng TJ[257] 1995 | Mixed | 32           | 46            | 34           | 44           | NA           | NA | NA |
| Moreira[19] 1996  | Caucasian | 55           | 43            | 40           | 44           | NA           | NA | NA |
| Ge[20] 1996       | Asian     | 30           | 59            | 18           | 35           | NA           | NA | NA |
| Deakin[21] 1996   | Caucasian | 56           | 50            | 319          | 386          | 91           | 17 | 526 |
| el-Zein[22] 1997  | Mixed     | 31           | 23            | 27           | 23           | 42           | 12 | 43  |
| Harrison[25] 1997 | Caucasian | 67           | 101           | 179          | 205          | NA           | NA | NA |
| Kelsey[20] 1997   | Mixed     | 27           | 33            | 87           | 59           | 50           | 10 | 129 |
| Kelsey[29] 1997   | African   | 84           | 24            | 102          | 81           | 27           | 103| 29  |
| Garcia-Closas[27] 1997 | Mixed | 190         | 226           | 214          | 232          | NA           | NA | NA |
| Ryberg[28] 1997   | Caucasian | 61           | 74            | 179          | 163          | NA           | NA | NA |
| Sun[30] 1997      | Asian     | 60           | 147           | 178          | 186          | NA           | NA | NA |
| Salagovic[31] 1998 | Caucasian | 48           | 69            | 125          | 123          | 101          | 16 | 206 |
| Hong[32] 1998     | Asian     | 38           | 47            | 30           | 33           | NA           | NA | NA |
| Le Marchand[34] 1998 | Mixed | 100         | 135           | 182          | 268          | NA           | NA | NA |
| Nyberg[35] 1998   | Caucasian | 100          | 84            | 80           | 81           | NA           | NA | NA |
| Saarikoski[36] 1998 | Caucasian | 108          | 100           | 157          | 137          | 26           | 255| 39  |
| Jureenkova-Mironova[37] 1998 | Caucasian | 69          | 81            | 82           | 90           | 123          | 27 | 145 |
| Gao JR[40] 1998   | Asian     | 19           | 27            | 45           | 25           | NA           | NA | NA |
| Qu YF[41] 1998    | Asian     | 80           | 102           | 85           | 94           | NA           | NA | NA |
| Hu YL[39] 1998    | Asian     | 25           | 34            | 30           | 29           | NA           | NA | NA |
| Harris MJ[26] 1998 | Mixed | NA          | NA            | NA           | NA           | NA           | NA | 79 |
| Tang DL[288] 1998 | Mixed     | 45           | 60            | 45           | 36           | NA           | NA | NA |
| Gao[39] 1999      | Asian     | 25           | 34            | 65           | 67           | NA           | NA | NA |
| To-Figueras[40] 1999 | Caucasian | 68          | 96            | 167          | 165          | 123          | 41 | 261 |
| Persson[41] 1999  | Asian     | 27           | 48            | 40           | 79           | NA           | NA | NA |
| Katoh[42] 1999    | Asian     | NA           | NA            | NA           | NA           | NA           | NA | 34 |
| Kihara[43] 1999   | Asian     | 152          | 206           | 126          | 131          | NA           | NA | 263 |
| Butkiewicz[259] 1999 | Caucasian | 79          | 86            | 174          | 151          | NA           | NA | 77 |
| Woodson[26] 1999  | Caucasian | 159          | 160           | 171          | 162          | NA           | NA | NA |
| Kiyohara[44] 2000 | Asian     | 33           | 53            | 39           | 49           | 39           | 47 | 39 |
| Dresler[45] 2000  | Mixed     | 66           | 103           | 66           | 98           | NA           | NA | NA |
| London[46] 2000   | Asian     | 110          | 122           | 283          | 427          | 98           | 134| 284 |
| Ford[47] 2000     | African   | 80           | 37            | 96           | 24           | NA           | NA | NA |
| Malats[48] 2000   | Caucasian | 56           | 66            | 68           | 53           | 90           | 32 | 77 |
| Hou[51] 2000      | Caucasian | 132          | 150           | 194          | 181          | NA           | NA | NA |
| Last Name | Year | Ethnicity | Total RNA | cyRNA | CD4 | cyCD4 | CD8 | cyCD8 | CD4/CD8 |
|----------|------|-----------|-----------|-------|------|-------|------|-------|---------|
| Spitz    | 2000 | Caucasian | 257       | 246   | 226  | 239   | 371  | 132   | 361     |
| Cheng    | 2000 | Asian     | 39        | 34    | 16   | 17    | NA   | NA    | NA      |
| Lan      | 2000 | Asian     | 40        | 82    | 62   | 60    | 49   | 73     | 58      |
| Liu      | 2001 | Mixed     | 409       | 517   | 475  | 561   | 819  | 205   | 918     |
| Risch    | 2001 | Caucasian | 183       | 200   | 161  | 185   | 334  | 49    | 281     |
| Quíñones| 2001 | Mixed     | 33        | 25    | 133  | 41    | NA   | NA    | NA      |
| Zhao     | 2001 | Asian     | 87        | 146   | 68   | 119   | 101  | 132   | 85      |
| Chen     | 2001 | Asian     | 48        | 58    | 67   | 39    | NA   | NA    | NA      |
| Hou      | 2001 | Caucasian | 93        | 77    | 70   | 74    | NA   | NA    | NA      |
| Gsur     | 2001 | Caucasian | 70        | 64    | 68   | 66    | NA   | NA    | NA      |
| Hou      | 2001 | Caucasian | NA        | NA    | NA   | NA    | 167  | 17    | 143     |
| Perera   | 2002 | Caucasian | 39        | 47    | 91   | 69    | NA   | NA    | NA      |
| Stücker  | 2002 | Caucasian | 118       | 129   | 136  | 118   | 213  | 38    | 216     |
| Lewis    | 2002 | Caucasian | 56        | 31    | 68   | 75    | 68   | 19    | 115     |
| Sunaga   | 2002 | Asian     | 105       | 93    | 96   | 56    | 99   | 93    | 59      |
| Miller   | 2002 | Caucasian | 344       | 423   | 423  | 504   | NA   | NA    | NA      |
| Lu       | 2002 | Asian     | 159       | 155   | 159  | 161   | NA   | NA    | NA      |
| Zhang    | 2002 | Asian     | 24        | 41    | 33   | 27    | NA   | NA    | NA      |
| Shi Y    | 2002 | Asian     | 46        | 74    | 67   | 53    | NA   | NA    | NA      |
| Chan Y   | 2002 | Asian     | 13        | 43    | 34   | 65    | NA   | NA    | NA      |
| Nie LH   | 2002 | Asian     | NA        | NA    | NA   | NA    | NA   | NA    | 89      |
| Sgambato | 2002 | Caucasian | 8         | 5     | 47   | 53    | NA   | NA    | NA      |
| Zhang JK | 2002 | Asian     | 67        | 94    | 73   | 92    | 87   | 74    | 93      |
| Cajas-Salazar | 2003 | Caucasian | 62        | 48    | 80   | 39    | 79   | 31    | 95      |
| Wang     | 2003 | Asian     | NA        | NA    | NA   | NA    | NA   | 59    | 53      |
| Pinarbas | 2003 | Caucasian | 53        | 48    | 169  | 37    | NA   | NA    | NA      |
| Dialyana | 2003 | Caucasian | 59        | 63    | 82   | 96    | 101  | 11    | 158     |
| Tsai     | 2003 | Mixed     | 98        | 137   | 46   | 48    | 196  | 36    | 74      |
| Kiyohara | 2003 | Asian     | 64        | 4     | 124  | 135   | NA   | NA    | NA      |
| Wang     | 2003 | Asian     | 67        | 97    | 91   | 90    | NA   | NA    | NA      |
| Nazar-Stewart | 2003 | Mixed     | 131       | 143   | 255  | 246   | 222  | 52    | 410     |
| Hung     | 2003 | Caucasian | 132       | 152   | 706  | 727   | NA   | NA    | NA      |
| Taioli   | 2003 | Caucasian | 111       | 125   | 643  | 639   | 107  | 37    | 698     |
| Liu      | 2003 | Asian     | NA        | NA    | NA   | NA    | NA   | 124   | 74      |
| Wang     | 2003 | Caucasian | NA        | NA    | NA   | NA    | NA   | 149   | 74      |
| Oztürk   | 2003 | Caucasian | 29        | 26    | 33   | 32    | NA   | NA    | NA      |
| Ruano-Ravina | 2003 | Caucasian | 60       | 72    | 100  | 87    | 105  | 27    | 141     |
| Chen     | 2003 | Asian     | 14        | 24    | 42   | 57    | NA   | NA    | NA      |
| Wang S   | 2003 | Asian     | 35        | 61    | 38   | 33    | NA   | NA    | NA      |
| Wang     | 2004 | Caucasian | 312       | 404   | 423  | 516   | 573  | 138   | 750     |
| Vinei    | 2004 | Caucasian | 915       | 1,052 | 1,304 | 1,415 | 1,602 | 365   | 2,177   |
| Sobi     | 2004 | Indian    | 62        | 38    | 52   | 24    | 82   | 18    | 65      |
| Habalova | 2004 | Caucasian | 53        | 68    | 69   | 81    | NA   | NA    | NA      |
| Yang     | 2004 | Asian     | 78        | 108   | 64   | 75    | NA   | NA    | NA      |
| Yang     | 2004 | Asian     | 99        | 130   | 80   | 117   | 86   | 143   | 95      |
| Alexandre| 2004 | Caucasian | 237       | 287   | 240  | 290   | 456  | 68    | 456     |
| Belogubova| 2004 | Caucasian | 76        | 91    | 333  | 330   | 137  | 30    | 538     |
| Schneider| 2004 | Caucasian | 212       | 234   | 328  | 294   | 371  | 75    | 507     |
| Gallegos-Arreola | 2003-2004 | Mixed | NA       | NA    | NA   | 41    | 11   | 169   | 9       |
| Dong     | 2004 | Asian     | 34        | 48    | 55   | 36    | NA   | NA    | NA      |
| Wang     | 2004 | Asian     | 32        | 45    | 62   | 45    | 33   | 44    | 53      |
| Ye Y    | 2004 | Asian     | 23        | 35    | 37   | 25    | NA   | NA    | NA      |
| Gu Y    | 2004 | Asian     | 79        | 101   | 122  | 102   | NA   | NA    | NA      |
| Luo CL  | 2004 | Asian     | 18        | 45    | 23   | 24    | NA   | NA    | NA      |
| Huang    | 2004 | Asian     | 35        | 56    | 65   | 73    | NA   | NA    | NA      |
| Name     | Year | Ethnicity | Age 1 | Age 2 | Age 3 | Age 4 | Age 5 | Age 6 | Age 7 | Age 8 | Age 9 | Age 10 | Age 11 | Age 12 | Age 13 | Age 14 | Age 15 | Age 16 | Age 17 | Age 18 | Age 19 | Age 20 | Age 21 | Age 22 | Age 23 | Age 24 | Age 25 | Age 26 | Age 27 | Age 28 | Age 29 | Age 30 | Age 31 | Age 32 | Age 33 | Age 34 | Age 35 | Age 36 | Age 37 | Age 38 | Age 39 | Age 40 | Age 41 | Age 42 | Age 43 | Age 44 | Age 45 | Age 46 | Age 47 | Age 48 | Age 49 | Age 50 | Age 51 | Age 52 | Age 53 | Age 54 | Age 55 | Age 56 | Age 57 | Age 58 | Age 59 | Age 60 | Age 61 | Age 62 | Age 63 | Age 64 | Age 65 | Age 66 | Age 67 | Age 68 | Age 69 | Age 70 | Age 71 | Age 72 | Age 73 | Age 74 | Age 75 | Age 76 | Age 77 | Age 78 | Age 79 | Age 80 | Age 81 | Age 82 | Age 83 | Age 84 | Age 85 | Age 86 | Age 87 | Age 88 | Age 89 | Age 90 | Age 91 | Age 92 | Age 93 | Age 94 | Age 95 | Age 96 | Age 97 | Age 98 | Age 99 | Age 100 |
| Title | Year | Ethnicity | Sample Size | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|-------|------|-----------|-------------|------|------|------|------|------|------|
| Carpenter | 2009 | Mixed | 184 | 127 | 346 | 276 | NA | NA | NA | NA | Ns |
| Zupa’ | 2009 | Caucasian | 33 | 42 | 53 | 68 | NA | NA | NA | NA | Ns |
| Lam | 2009 | Mixed | 62 | 75 | 219 | 222 | 106 | 29 | 335 | 87 | NA | Ns |
| Cote | 2009 | Caucasian | 178 | 210 | 206 | 197 | 311 | 77 | 324 | 82 | 171 | 17 |
| Cote | 2009 | African | 78 | 36 | 93 | 28 | 87 | 28 | 95 | 26 | 28 | 61 |
| Kumar | 2009 | Indian | 49 | 44 | 154 | 99 | 69 | 24 | 197 | 56 | 55 | 35 |
| Qi XS | 2009 | Asian | 19 | 34 | 31 | 41 | NA | NA | NA | NA | NA | Ns |
| Wang MJ | 2009 | Asian | 161 | 143 | 383 | 258 | NA | NA | NA | NA | Ns |
| Yue Z | 2009 | Asian | NA | NA | NA | NA | NA | NA | NA | 64 | 36 |
| Chen H | 2009 | Asian | 59 | 99 | 208 | 247 | NA | NA | NA | NA | Ns |
| Liu JS | 2009 | Asian | NA | NA | NA | NA | NA | 43 | 57 | 79 | 56 | Ns |
| Yin Q | 2009 | Asian | NA | NA | NA | NA | NA | NA | NA | 62 | 51 |
| Yadav | 2010 | Indian | 82 | 19 | 152 | 69 | 68 | 33 | 118 | 103 | 54 | 47 |
| Jin | 2010 | Asian | 55 | 95 | 71 | 79 | NA | NA | NA | NA | NA | Ns |
| Gervasini | 2010 | Caucasian | 56 | 47 | 127 | 120 | 87 | 16 | 206 | 41 | 53 | 50 |
| Timofeeva | 2010 | Caucasian | 279 | 334 | 607 | 644 | 511 | 101 | 1035 | 214 | 279 | 26 |
| Cabral | 2010 | Caucasian | 16 | 26 | 42 | 33 | 21 | 21 | 39 | 36 | NA | Ns |
| Cabral | 2010 | African | 8 | 14 | 5 | 7 | 17 | 5 | 7 | 5 | NA | Ns |
| Altimisik | 2010 | Caucasian | 47 | 28 | 40 | 15 | 58 | 17 | 46 | 9 | NA | Ns |
| Sreeleka | 2010 | Indian | 63 | 23 | 50 | 10 | 52 | 34 | 56 | 4 | NA | Ns |
| Lam | 2010 | Caucasian | NA | NA | NA | NA | NA | NA | NA | 853 | 73 |
| Song B | 2010 | Asian | 51 | 74 | 70 | 55 | NA | NA | NA | NA | NA | Ns |
| Hua F | 2010 | Asian | NA | NA | NA | NA | NA | NA | NA | 171 | 88 |
| Zheng DJ | 2010 | Asian | 115 | 150 | 132 | 175 | NA | NA | NA | NA | NA | Ns |
| Zhu XX | 2010 | Asian | 67 | 93 | 88 | 72 | NA | NA | NA | NA | NA | Ns |
| Tamaki | 2011 | Asian | 106 | 86 | 101 | 102 | 95 | 97 | 99 | 104 | NA | Ns |
| Kohno | 2011 | Asian | 174 | 200 | 159 | 158 | NA | NA | NA | NA | NA | Ns |
| Young | 2011 | Caucasian | 173 | 274 | 465 | 680 | NA | NA | NA | NA | NA | Ns |
| Singh | 2011 | Indian | 129 | 71 | 147 | 53 | NA | NA | NA | NA | NA | Ns |
| Ihasan | 2011 | Indian | 122 | 66 | 177 | 113 | 155 | 33 | 217 | 73 | 102 | 77 |
| Atinkaya | 2012 | Caucasian | 72 | 53 | 59 | 56 | 102 | 25 | 100 | 22 | NA | Ns |
| Fowke | 2011 | Asian | 98 | 110 | 329 | 456 | 100 | 108 | 403 | 381 | NA | Ns |
| Bai TV | 2011 | Asian | NA | NA | NA | NA | 56 | 50 | 139 | 111 | NA | Ns |
| Zhang JQ | 2011 | Asian | 33 | 17 | 43 | 7 | NA | NA | NA | NA | NA | Ns |
| Ai | 2011 | Asian | 14 | 36 | 27 | 23 | NA | NA | NA | NA | NA | Ns |
| Zhou XL | 2011 | Asian | 87 | 122 | 119 | 89 | NA | NA | NA | NA | Ns |
| Bai TV | 2011 | Asian | 49 | 79 | 125 | 89 | 72 | 56 | 118 | 96 | 70 | 48 |
| Du GS | 2011 | Asian | 52 | 73 | 54 | 71 | 68 | 57 | 69 | 56 | NA | Ns |
| Kiyohara | 2012 | Asian | 194 | 268 | 194 | 185 | 245 | 217 | 215 | 164 | 323 | 12 |
| Dziarn | 2012 | Caucasian | 100 | 130 | 130 | 160 | 171 | 59 | 242 | 48 | 115 | 91 |
| Ada | 2012 | Caucasian | 90 | 123 | 107 | 124 | 162 | 51 | 188 | 43 | 133 | 80 |
| López-Cima | 2012 | Caucasian | 375 | 401 | 358 | 418 | 618 | 158 | 611 | 165 | 352 | 33 |
| Liu | 2012 | Asian | 215 | 145 | 253 | 107 | NA | NA | NA | NA | NA | Ns |
| Vural | 2012 | Caucasian | NA | NA | NA | NA | NA | NA | NA | 52 | 32 |
| Pliarchopoulou | 2012 | Caucasian | 45 | 55 | 79 | 46 | NA | NA | NA | NA | NA | Ns |
| Wang N | 2012 | Asian | 87 | 122 | 143 | 113 | 119 | 90 | 156 | 100 | NA | Ns |
| Yao ZG | 2012 | Asian | 54 | 96 | 82 | 68 | NA | NA | NA | NA | NA | Ns |
| Liang KC | 2012 | Asian | 21 | 47 | 31 | 39 | 23 | 45 | 36 | 34 | NA | Ns |
| Chen CM | 2012 | Asian | 77 | 123 | 89 | 110 | NA | NA | NA | NA | NA | Ns |
| Shukla | 2013 | Indian | 134 | 84 | 148 | 90 | 136 | 82 | 180 | 58 | NA | Ns |
| Shukla | 2013 | Indian | 134 | 84 | 80 | 124 | 136 | 82 | 168 | 36 | NA | Ns |
| Piao | 2013 | Asian | 1,696 | 2,237 | 776 | 923 | 1,863 | 2,070 | 841 | 858 | NA | Ns |
| Lu QC | 2013 | Asian | 30 | 61 | 68 | 70 | NA | NA | NA | NA | NA | Ns |
| Zhang | 2014 | Asian | 44 | 66 | 58 | 42 | 34 | 76 | 47 | 53 | NA | Ns |
| Bag | 2014 | Indian | NA | NA | NA | NA | 20 | 6 | 28 | 5 | NA | Ns |
| Pan | 2014 | Asian | 218 | 305 | 299 | 224 | 253 | 270 | 311 | 212 | NA | Ns |
| Study         | Year | Region   | GA1 | GA2 | GA3 | GA4 | GA5 | GA6 | GA7 | GA8 | GA9 | GA10 | GA11 | GA12 | GA13 | GA14 | GA15 |
|--------------|------|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|
| Jiang        | 2014 | Asian    | 132 | 190 | 268 | 188 | 175 | 147 | 253 | 203 | 174 |       |      |      |      |      |      |
| Tao J        | 2014 | Asian    | NA  | NA  | NA  | NA  | NA  | NA  | NA  | NA  | 70  |       |      |      |      |      |      |
| Sharma       | 2015 | Indian   | 136 | 134 | 167 | 103 | 220 | 50  | 233 | 37  | 225 |       |      |      |      |      |      |
| Mota         | 2015 | Caucasian| 108 | 75  | 127 | 101 | 122 | 61  | 174 | 54  | 71  | 94    |      |      |      |      |      |
| Peddireddy   | 2016 | Indian   | 182 | 64  | 187 | 63  | 200 | 46  | 224 | 26  | NA  |       |      |      |      |      |      |
| Masood       | 2015 | Indian   | 197 | 53  | 212 | 58  | 230 | 20  | 246 | 24  | NA  |       |      |      |      |      |      |
| Girdhar      | 2016 | Indian   | 160 | 160 | 198 | 122 | 258 | 62  | 263 | 57  | NA  |       |      |      |      |      |      |
| Liu          | 2016 | Asian    | NA  | NA  | NA  | NA  | NA  | NA  | NA  | NA  | 215 | 80    |      |      |      |      |      |
| Wang J       | 2016 | Asian    | 48  | 102 | 78  | 72  | NA  | NA  | NA  | NA  | NA  |      |      |      |      |      |      |
| Wang         | 2017 | Asian    | 82  | 118 | 112 | 88  | 114 | 86  | 122 | 78  | NA  |       |      |      |      |      |      |
| Minina       | 2017 | Caucasian| 210 | 143 | 172 | 128 | 267 | 86  | 233 | 67  | 135 | 18    |      |      |      |      |      |
| Liu AS       | 2017 | Asian    | 27  | 44  | 45  | 26  | NA  | NA  | NA  | NA  | NA  |      |      |      |      |      |      |
| He           | 2018 | Asian    | 179 | 134 | 217 | 113 | NA  | NA  | NA  | NA  | NA  |      |      |      |      |      |      |

1 NA = not available, HWE = Hardy-Weinberg equilibrium, * = Ile/Val + Val/Val
## Supplemental Table 5 Genotype frequencies of the GSTM1, GSTT1, and GSTP1 IIe105Val polymorphisms between lung cancer and control groups by histological type

| First author/Year | Ethnicity | Logistic regression odds ratio (95% CI) | p-value | Reference | Notes |
|-------------------|-----------|----------------------------------------|---------|-----------|-------|
| Seidegård[1] 1986 | Mixed     | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Seidegård[2] 1990 | Mixed     | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Brockmöller[7] 1993 | Caucasian | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Katoh[10] 1994 | Asian     | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| London[13] 1995 | Mixed     | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Kihara[15] 1995 | Asian     | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Moreira[19] 1996 | Caucasian | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| To-Figueras[24] 1997 | Caucasian | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Sun[30] 1997 | Asian     | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Hong[32] 1998 | Asian     | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Jourenkova-Mironova[37] 1998 | Caucasian | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| To-Figueras[60] 1999 | Caucasian | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Kihara[15] 1999 | Asian     | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Woodson[261] 1999 | Caucasian | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Ford[27] 2000 | African   | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Hou[51] 2000 | Caucasian | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Stücker[59] 2002 | Caucasian | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Lewis[69] 2002 | Caucasian | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Reszka[73] 2003 | Caucasian | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Pinarbas[76] 2003 | Caucasian | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Nazar-Stewart[81] 2004 | Mixed | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Sobti[92] 2004 | Indian    | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Alexandre[98] 2004 | Caucasian | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Schneider[100] 2004 | Caucasian | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Sørensen[101] 2004 | Caucasian | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Li Y[282] 2004 | Asian     | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Lee[113] 2006 | Asian     | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Miller[118] 2006 | Caucasian | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Sobti[127] 2008 | Indian    | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Homma[128] 2008 | Mixed     | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Liu JN[276] 2009 | Asian     | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Gervasini[142] 2010 | Caucasian | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Cabral[144] 2010 | Mixed     | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Altimisik[147] 2010 | Caucasian | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Zheng Di[267] 2010 | Asian | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Young[150] 2011 | Caucasian | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Du G[290] 2011 | Asian     | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Ada[157] 2012 | Caucasian | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Lópe-Cima[159] 2012 | Caucasian | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Liu[160] 2012 | Asian     | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Vural[161] 2012 | Caucasian | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Tao J[204] 2014 | Asian     | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Sharma[171] 2015 | Indian    | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Girdhar[176] 2016 | Indian | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Wang J[209] 2016 | Asian     | 1.00 (0.50-2.00)                       | 0.98    |          |       |

### Large cell carcinoma

| First author/Year | Ethnicity | Logistic regression odds ratio (95% CI) | p-value | Reference | Notes |
|-------------------|-----------|----------------------------------------|---------|-----------|-------|
| Seidegård[1] 1986 | Mixed     | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Seidegård[2] 1990 | Mixed     | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Brockmöller[7] 1993 | Caucasian | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Kihara[15] 1995 | Asian     | 1.00 (0.50-2.00)                       | 0.98    |          |       |
| Study | Year | Ethnicity | Age Median | Age Range | Sex Male | Sex Female | ER Status | PR Status | HER2 Status |
|-------|------|-----------|------------|-----------|----------|------------|------------|-----------|-------------|
| To-Figueras [24] | 1997 | Caucasian | 9 | 3 | 248 | 6 | 10 | 2 | 157 | 155 |
| To-Figueras [40] | 1999 | Caucasian | NA | NA | NA | NA | NA | NA | 6 | 6 |
| Pinarbas [27] | 2003 | Caucasian | 5 | 6 | 169 | 37 | NA | NA | NA | NA |
| Schneider [100] | 2004 | Caucasian | 9 | 7 | 328 | 294 | 13 | 3 | 507 | 115 | 5 | 8 |
| Miller [130] | 2006 | Caucasian | NA | NA | NA | NA | NA | NA | 69 | 62 |
| Gervasini [142] | 2010 | Caucasian | 9 | 14 | 127 | 120 | 22 | 1 | 206 | 41 | 11 | 12 |
| Squamous carcinoma | | | | | | | | | | |
| Seidegaard [1] | 1986 | Mixed | 11 | 16 | 46 | 32 | NA | NA | NA | NA |
| Seidegaard [2] | 1990 | Mixed | 16 | 19 | 66 | 48 | NA | NA | NA | NA |
| Zhong [3] | 1991 | Mixed | 52 | 48 | 131 | 94 | NA | NA | NA | NA |
| Hirvonen [6] | 1993 | Mixed | 27 | 44 | 80 | 62 | NA | NA | NA | NA |
| Hirvonen [6] | 1993 | Mixed | 27 | 44 | 20 | 16 | NA | NA | NA | NA |
| Brockmüller [7] | 1993 | Caucasian | 17 | 24 | 174 | 181 | NA | NA | NA | NA |
| Nakachi [8] | 1993 | Asian | 33 | 52 | 86 | 84 | NA | NA | NA | NA |
| Kato [10] | 1994 | Asian | 11 | 12 | 28 | 20 | NA | NA | NA | NA |
| London [13] | 1995 | Mixed | 44 | 38 | 404 | 312 | NA | NA | NA | NA |
| Kihara [15] | 1995 | Asian | 60 | 80 | 241 | 228 | NA | NA | NA | NA |
| Kawajiri [25] | 1995 | Asian | 11 | 12 | 28 | 20 | NA | NA | NA | NA |
| Nagata [30] | 1995 | Asian | 25 | 61 | 178 | 186 | NA | NA | NA | NA |
| Sun [30] | 1997 | Asian | 25 | 61 | 178 | 186 | NA | NA | NA | NA |
| Hong [32] | 1998 | Asian | 12 | 15 | 30 | 33 | NA | NA | NA | NA |
| Le Marchand [34] | 1998 | Caucasian | 27 | 47 | 182 | 268 | NA | NA | NA | NA |
| Saarikoski [35] | 1998 | Caucasian | 44 | 50 | 157 | 137 | 76 | 15 | 255 | 39 | NA |
| Jourenkova-Mironova [37] | 1998 | Caucasian | 42 | 56 | 82 | 90 | 83 | 15 | 145 | 27 | 46 | 41 |
| Gao [39] | 1999 | Asian | 13 | 10 | 29 | 30 | NA | NA | NA | NA |
| Gao [39] | 1999 | Asian | 13 | 10 | 36 | 37 | NA | NA | NA | NA |
| To-Figueras [40] | 1999 | Caucasian | NA | NA | NA | NA | NA | NA | 29 | 20 |
| Kihara [43] | 1999 | Asian | 56 | 69 | 126 | 131 | NA | NA | NA | NA |
| Woodson [261] | 1999 | Caucasian | 78 | 69 | 171 | 162 | NA | NA | NA | NA |
| Butkiewicz [259] | 1999 | Caucasian | 56 | 54 | 174 | 151 | NA | NA | NA | 50 |
| Ford [37] | 2000 | African | 30 | 15 | 96 | 24 | NA | NA | NA | NA |
| Malats [48] | 2000 | Caucasian | 9 | 16 | 68 | 53 | 18 | 7 | 68 | 53 | NA |
| Hou [41] | 2000 | Caucasian | 53 | 76 | 194 | 181 | NA | NA | NA | NA |
| Liu [56] | 2001 | Mixed | 92 | 144 | 475 | 561 | 205 | 5 | 918 | 258 | NA |
| Risch [57] | 2001 | Caucasian | 70 | 97 | 161 | 185 | 149 | 18 | 281 | 65 | 76 | 77 |
| Gsur [63] | 2001 | Caucasian | 33 | 25 | 68 | 66 | NA | NA | NA | NA |
| Stücker [69] | 2002 | Caucasian | 63 | 50 | 136 | 118 | 97 | 18 | 216 | 52 | 54 | 46 |
| Lewis [69] | 2002 | Caucasian | 21 | 8 | 68 | 75 | 23 | 6 | 115 | 28 | 14 | 17 |
| Lu [72] | 2002 | Asian | 89 | 88 | 159 | 161 | NA | NA | NA | NA |
| Zhang [123] | 2002 | Asian | 11 | 21 | 33 | 27 | NA | NA | NA | NA |
| Qiao [254] | 2002 | Asian | 42 | 64 | 104 | 95 | NA | NA | NA | NA |
| Zhang JK [295] | 2002 | Asian | 25 | 29 | 73 | 92 | 29 | 25 | 72 | 93 | NA |
| Nie LH [249] | 2002 | Asian | NA | NA | NA | NA | NA | NA | 35 | 22 |
| Reszk [73] | 2003 | Caucasian | 40 | 21 | 101 | 64 | NA | NA | NA | 33 |
| Pinarbas [76] | 2003 | Caucasian | 19 | 24 | 169 | 37 | NA | NA | NA | NA |
| Nazar-Stewart [81] | 2003 | Mixed | 37 | 44 | 255 | 246 | 67 | 14 | 410 | 90 | 35 |
| Lin [84] | 2003 | Asian | 37 | 44 | 255 | 246 | 67 | 14 | 410 | 90 | 35 |
| Wang [281] | 2003 | Asian | 13 | 23 | 38 | 33 | NA | NA | NA | NA |
| Sobu [92] | 2004 | Asian | 42 | 29 | 52 | 24 | 56 | 15 | 65 | 11 | NA |
| Chan-Yeung [95] | 2004 | Asian | 14 | 24 | 80 | 117 | 15 | 23 | 95 | 102 | 29 | 9 |
| Alexandri [98] | 2004 | Caucasian | 85 | 81 | 240 | 290 | 142 | 24 | 456 | 74 | NA |
| Belogubova [99] | 2004 | Caucasian | 37 | 51 | 178 | 146 | 71 | 17 | 261 | 63 | NA |
| Author(s) | Year | Geographic Region | Race | Tumor Type | N1 | N2 | N3 | D1 | D2 | D3 | D4 | D5 | D6 |
|----------|------|-------------------|------|------------|----|----|----|----|----|----|----|----|----|
| el-Zein  | 2004 | Caucasian          | NA   | NA         | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kihara   | 2004 | Caucasian          | NA   | NA         | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| London   | 1995 | Mixed             | Asian| NA         | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brockmöller | 1993 | Caucasian         | NA   | NA         | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hirvonen | 1993 | Caucasian         | NA   | NA         | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brockenmüller | 1993 | Caucasian | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Katoh   | 1994 | Asian             | 7    | 2          | 28 | 20 | NA | NA | NA | NA | NA | NA | NA |
| London   | 1995 | Mixed             | 71   | 49         | 404 | 312 | NA | NA | NA | NA | NA | NA | NA |
| Kihara   | 1995 | Asian             | 98   | 113        | 241 | 228 | NA | NA | NA | NA | NA | NA | NA |
| Kawajiri | 1995 | Asian             | 73   | 78         | 191 | 167 | NA | NA | NA | NA | NA | NA | NA |
| Moreira  | 1996 | Portuguese        | 12   | 14         | 40 | 44 | NA | NA | NA | NA | NA | NA | NA |
| el-Zein  | 1997 | Mixed             | 17   | 10         | 27 | 23 | 22 | 5  | 43 | 7  | NA | NA | NA |
| Year  | Race     | Y | C | N | M | NA | N | N | N | N |
|-------|----------|---|---|---|---|----|---|---|---|---|
| 1997  | Caucasian | 17 | 25 | 155 | 37 | 33 | 9 | 97 | 95 | NA | N |
| 1997  | Caucasian | 17 | 25 | 93  | 27 | 33 | 9 | 60 | 60 | NA | N |
| 1997  | Caucasian | 20 | 21 | 179 | 163 | NA | NA | NA | NA | 17 | 20 |
| 1997  | Asian     | 22 | 46 | 178 | 186 | NA | NA | NA | NA | NA | N |
| 1998  | Asian     | 12 | 16 | 30  | 33 | NA | NA | NA | NA | NA | N |
| 1998  | Mixed     | 73 | 88 | 182 | 268 | NA | NA | NA | NA | NA | N |
| 1998  | Caucasian | 48 | 34 | 157 | 137 | 72 | 9  | 255 | 39 | NA | N |
| 1999  | Asian     | 6  | 20 | 29  | 30 | NA | NA | NA | NA | NA | N |
| 1999  | Asian     | 6  | 20 | 36  | 37 | NA | NA | NA | NA | NA | N |
| 1999  | Caucasian | NA | NA | NA  | NA | NA | NA | NA | 21 | 15 | N |
| 1999  | Asian     | 67 | 93 | 126 | 131 | NA | NA | NA | NA | 121 | 32 |
| 1999  | Caucasian | 29 | 24 | 171 | 162 | NA | NA | NA | NA | NA | N |
| 1999  | Caucasian | 20 | 25 | 174 | 151 | NA | NA | NA | NA | 22 | 16 |
| 2000  | African   | 31 | 12 | 96  | 24 | NA | NA | NA | NA | NA | N |
| 2000  | Caucasian | 34 | 31 | 68  | 53 | 51 | 14 | 77 | 44 | NA | N |
| 2000  | Caucasian | 29 | 25 | 194 | 181 | NA | NA | NA | NA | NA | N |
| 2001  | Mixed     | 215 | 257 | 475 | 561 | 412 | 100 | 918 | 258 | NA | N |
| 2001  | Caucasian | 73 | 77 | 161 | 185 | 128 | 22  | 281 | 65 | 76 | 77 |
| 2001  | Caucasian | 37 | 39 | 68  | 88 | NA | NA | NA | NA | NA | N |
| 2002  | Caucasian | 21 | 36 | 136 | 118 | 52 | 8  | 216 | 52 | 32 | 23 |
| 2002  | Caucasian | 1  | 9  | 68  | 75 | 2  | 8  | 115 | 28 | 4  | 5  |
| 2002  | Asian     | 105 | 93 | 96  | 56 | 99 | 99 | 93  | 59 | NA | N |
| 2002  | Asian     | 67 | 70 | 159 | 161 | NA | NA | NA | NA | 44 | N |
| 2002  | Asian     | 23 | 48 | 73  | 92 | 36 | 35 | 72  | 93 | NA | N |
| 2002  | Asian     | NA | NA | NA  | NA | NA | NA | NA | 41 | 28 | N |
| 2003  | Caucasian | 7  | 5  | 101 | 64 | NA | NA | NA | 6  | 6* | N |
| 2003  | Asian     | 43 | 69 | 59  | 60 | 59 | 53 | 65  | 54 | 67 | 44 |
| 2003  | Caucasian | 7  | 4  | 169 | 37 | NA | NA | NA | NA | NA | N |
| 2003  | Asian     | 67 | 97 | 91  | 90 | NA | NA | NA | NA | NA | N |
| 2003  | Mixed     | 40 | 56 | 255 | 246 | 77 | 19 | 410 | 90 | 41 | 41 |
| 2003  | Caucasian | 70 | 68 | 590 | 600 | NA | NA | NA | NA | NA | N |
| 2003  | Asian     | NA | NA | NA  | NA | NA | NA | NA | 69 | 36 | N |
| 2003  | Asian     | 14 | 24 | 38  | 33 | NA | NA | NA | NA | NA | N |
| 2004  | Asian     | 58 | 69 | 80  | 117 | 45 | 82 | 95  | 102 | 84 | 43 |
| 2004  | Caucasian | 62 | 82 | 240 | 290 | 128 | 16 | 456 | 74 | NA | N |
| 2004  | Caucasian | 21 | 18 | 333 | 330 | 31 | 8  | 333 | 330 | NA | N |
| 2004  | Caucasian | 59 | 53 | 328 | 294 | 97 | 15 | 507 | 115 | 48 | 43 |
| 2004  | Caucasian | NA | NA | NA  | NA | 70 | 13 | 233 | 16 | NA | N |
| 2004  | Asian     | 12 | 12 | 62  | 45 | 13 | 11 | 53  | 54 | NA | N |
| 2004  | Asian     | 11 | 20 | 65  | 73 | NA | NA | NA | NA | NA | N |
| 2004  | Asian     | 5  | 8  | 77  | 61 | NA | NA | NA | NA | NA | N |
| 2005  | Caucasian | 119 | 117 | 781 | 818 | 130 | 30 | 642 | 154 | NA | N |
| 2005  | Asian     | NA | NA | NA  | NA | 31 | 30 | 94  | 58 | NA | N |
| 2005  | Asian     | 29 | 32 | 91  | 61 | NA | NA | NA | NA | NA | N |
| 2005  | Asian     | 55 | 78 | 103 | 124 | 69 | 64 | 140 | 87 | 77 | 51 |
| 2005  | Asian     | NA | NA | NA  | NA | NA | NA | NA | 34 | 27 | N |
| 2005  | Asian     | 22 | 26 | 91  | 105 | 26 | 22 | 89  | 107 | NA | N |
| 2005  | Caucasian | 231 | 267 | 258 | 367 | 377 | 117 | 510 | 114 | 225 | 22 |
| 2005  | Caucasian | NA | NA | NA  | NA | NA | NA | NA | NA | 402 | 34 |
| 2005  | Asian     | NA | NA | NA  | NA | NA | NA | NA | 25 | 19 | N |
| 2007  | Asian     | 34 | 34 | 59  | 62 | NA | NA | NA | NA | NA | N |
| 2007  | Indian    | 5  | 6  | 98  | 53 | 9  | 2  | 131 | 20 | 4  | 7* |
| 2008  | Asian     | NA | NA | NA  | NA | NA | NA | NA | 110 | 54 | N |
| 2008  | Indian    | 42 | 19 | 147 | 64 | 45 | 16 | 183 | 28 | 35 | 20 |
| 2009  | Asian     | 12 | 24 | 208 | 247 | NA | NA | NA | NA | NA | N |
| 2009  | Asian     | NA | NA | NA  | NA | 17 | 23 | 79  | 56 | NA | N |
| Last name   | Year | Ethnicity | A1 | A2 | A3 | A4 | A5 | A6 | A7 | A8 | A9 | A10 | A11 | A12 | A13 | A14 | A15 | A16 | A17 |
|-------------|------|-----------|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gervasini   | 2010 | Caucasian | 10 | 6  | 127| 120| 14 | 2  | 206| 41 | 10 | 6a  | 10  |     |     |     |     |     |     |
| Altinisik  | 2010 | Caucasian | 13 | 8  | 40 | 15 | 15 | 6  | 46 | 9  | NA | NA  | NA  | NA  | NA  |     |     |     |     |
| Zheng DJ   | 2010 | Asian     | 51 | 48 | 132| 175| NA | NA | NA | NA | NA | NA  | NA  | NA  | NA  |     |     |     |     |
| Hua F      | 2010 | Asian     | NA | NA | NA | NA | NA | NA | NA | NA | NA | 65  | 31  |     |     |     |     |     |     |
| Young      | 2010 | Caucasian | 70 | 118| 465| 680| NA | NA | NA | NA | NA | NA  | NA  | NA  | NA  |     |     |     |     |
| Zhou XL    | 2010 | Asian     | 32 | 37 | 119| 89 | NA | NA | NA | NA | NA | NA  | NA  | NA  | NA  |     |     |     |     |
| Fan J      | 2011 | Asian     | 8  | 27 | 31 | 39 | 11 | 24 | 36 | 34 | NA | NA  | NA  | NA  | NA  |     |     |     |     |
| Du GB      | 2009 | Asian     | 14 | 17 | 54 | 71 | 17 | 14 | 69 | 56 | NA | NA  | NA  | NA  | NA  |     |     |     |     |
| Dzian      | 2012 | Caucasian | 54 | 64 | 130| 160| 83 | 35 | 242| 48 | 59 | 46  |     |     |     |     |     |     |     |
| López-Cima | 2012 | Caucasian | 28 | 31 | 107| 124| 41 | 18 | 188| 43 | 40 | 19  |     |     |     |     |     |     |     |
| Liu        | 2012  | Asian     | 89 | 51 | 253| 107| NA | NA | NA | NA | NA | NA  |     |     |     |     |     |     |     |
| Lu QC      | 2013  | Asian     | 18 | 31 | 68 | 70 | NA | NA | NA | NA | NA | NA  |     |     |     |     |     |     |     |
| Pan        | 2014  | Asian     | 102| 141| 299| 224| 118| 125| 311| 212| NA | NA  |     |     |     |     |     |     |     |
| Tao J      | 2014  | Asian     | NA | NA | NA | NA | NA | NA | NA | NA | 37 | 47  |     |     |     |     |     |     |     |
| Wang       | 2015  | Asian     | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA  |     |     |     |     |     |     |     |
| Sharma     | 2015  | Indian    | 39 | 47 | 167| 103| 62 | 24 | 233| 37 | 74 | 11  |     |     |     |     |     |     |     |
| Peddireddy | 2016  | Indian    | 80 | 29 | 187| 63 | 88 | 21 | 224| 26 | NA | NA  |     |     |     |     |     |     |     |
| Girdhar    | 2016  | Indian    | 51 | 55 | 198| 122| 78 | 28 | 263| 57 | NA | NA  |     |     |     |     |     |     |     |
| Wang J     | 2016  | Asian     | 6  | 16 | 78 | 72 | NA | NA | NA | NA | NA | NA  |     |     |     |     |     |     |     |

NA = not available, * = Ile/Val + Val/Val
| First author/Year | Ethnicity | GSTM1 genotype distribution | GSTT1 genotype distribution | GSTP1 Ile105Val polymorphisms between smoking status |
|-------------------|-----------|-----------------------------|-----------------------------|--------------------------------------------------|
| Smoking | | Case | Control | Case | Control | Case | Control | Case | Control |
| Seidegård[1] 1986 | Mixed | 23 | 43 | 46 | 32 | NA | NA | NA | NA | N |
| Seidegård[2] 1990 | Mixed | 47 | 78 | 66 | 48 | NA | NA | NA | NA | N |
| Hirvonen[3] 1993 | Mixed | 59 | 69 | 13 | 11 | NA | NA | NA | NA | N |
| Brockmöller[4] 1993 | Caucasian | 51 | 60 | 61 | 74 | NA | NA | NA | NA | N |
| Nazar-Stewart[5] 1993 | Mixed | 9 | 26 | 23 | 20 | NA | NA | NA | NA | N |
| Katoh[6] 1994 | Asian | 23 | 20 | 28 | 20 | NA | NA | NA | NA | N |
| London[7] 1995 | Mixed | 194 | 131 | 270 | 198 | NA | NA | NA | NA | N |
| Kihara[8] 1995 | Asian | 141 | 197 | 120 | 112 | NA | NA | NA | NA | N |
| Deakin[9] 1996 | Caucasian | 56 | 50 | 58 | 70 | 91 | 17 | 111 | 18 | NA | N |
| el-Zein[10] 1997 | Mixed | 31 | 23 | 27 | 23 | 42 | 12 | 43 | 7 | NA | N |
| Jourenkova[11] 1997 | Caucasian | 69 | 81 | 82 | 90 | 123 | 27 | 145 | 27 | NA | N |
| Kelsey[12] 1997 | Mixed | 108 | 52 | 107 | 54 | 125 | 35 | 134 | 27 | NA | N |
| Sun[13] 1997 | Asian | 42 | 98 | 84 | 89 | NA | NA | NA | NA | N |
| Nyberg[14] 1998 | Caucasian | 53 | 43 | 44 | 38 | NA | NA | NA | NA | N |
| Cheng TJ[15] 1995 | Mixed | 30 | 37 | 21 | 34 | NA | NA | NA | NA | N |
| Gao[16] 1999 | Asian | 18 | 20 | 28 | 19 | NA | NA | NA | NA | N |
| Katoh[17] 1999 | Asian | 152 | 206 | 95 | 89 | NA | NA | NA | NA | N |
| Kihara[18] 1999 | Asian | 159 | 160 | 171 | 162 | NA | NA | NA | NA | N |
| Woodson[19] 1999 | Caucasian | 73 | 33 | 69 | 22 | NA | NA | NA | NA | N |
| Ford[20] 2000 | African | 86 | 93 | 93 | 73 | NA | NA | NA | NA | N |
| Steicke[21] 2000 | Caucasian | 227 | 214 | 219 | 204 | 313 | 115 | 322 | 97 | NA | N |
| Zhao[22] 2001 | Asian | 35 | 61 | 8 | 10 | 39 | 57 | 10 | 8 | NA | N |
| Chen SQ[23] 2001 | Asian | 38 | 42 | 51 | 29 | NA | NA | NA | NA | N |
| Hou[24] 2001 | Caucasian | 38 | 24 | 24 | 27 | NA | NA | NA | NA | N |
| Hou[25] 2001 | Caucasian | NA | NA | NA | NA | 83 | 13 | 77 | 6 | NA | N |
| Perera[26] 2002 | Caucasian | 31 | 40 | 75 | 62 | NA | NA | NA | 27 | 4 | N |
| Sunaga[27] 2002 | Asian | 69 | 51 | 57 | 40 | 60 | 60 | 60 | 37 | NA | N |
| Zhang[28] 2002 | Asian | 18 | 33 | 19 | 13 | NA | NA | NA | NA | N |
| Zhang JK[29] 2002 | Asian | 49 | 55 | 25 | 40 | 57 | 47 | 37 | 28 | NA | N |
| Nie LH[30] 2002 | Asian | NA | NA | NA | NA | NA | NA | NA | 59 | 3 | N |
| Wang[31] 2003 | Asian | NA | NA | NA | NA | 25 | 23 | 21 | 27 | 30 | 1 |
| Wang[32] 2003 | Asian | 26 | 44 | 38 | 38 | NA | NA | NA | NA | NA | N |
| Nazar-Stewart[33] 2003 | Mixed | 127 | 136 | 190 | 171 | 212 | 51 | 296 | 65 | 101 | 1 |
| Taioli[34] 2003 | Caucasian | 92 | 104 | 301 | 297 | 86 | 32 | 291 | 69 | NA | N |
| Lin[35] 2003 | Asian | NA | NA | NA | NA | NA | NA | NA | 72 | 4 | N |
| Wang[36] 2003 | Caucasian | NA | NA | NA | NA | NA | NA | NA | NA | N |
| Ruan-Ravina[37] 2003 | Caucasian | 52 | 63 | 58 | 52 | 91 | 24 | 85 | 25 | NA | N |
| Xian XZ[38] 2003 | Asian | 24 | 31 | 28 | 34 | NA | NA | NA | NA | N |
| Chen LJ[39] 2003 | Asian | 9 | 16 | 15 | 21 | NA | NA | NA | NA | N |
| Wang S[40] 2003 | Asian | 21 | 46 | 9 | 25 | NA | NA | NA | NA | N |
| Wang[41] 2004 | Caucasian | 293 | 381 | 271 | 336 | 540 | 129 | 470 | 133 | NA | N |
| Habalova[42] 2004 | Caucasian | 47 | 46 | 40 | 48 | NA | NA | NA | NA | N |
| Alexandre[43] 2004 | Caucasian | 102 | 94 | 130 | 142 | 172 | 24 | 231 | 41 | NA | N |
| Belogubova[44] 2004 | Caucasian | 69 | 79 | 187 | 186 | 125 | 23 | 306 | 67 | NA | N |
| Schneider[45] 2004 | Caucasian | 7 | 11 | 74 | 77 | 15 | 3 | 125 | 26 | 178 | 2 |
| Gallegos-Arceola[46] 2003-2004 | Mixed | NA | NA | NA | NA | 39 | 9 | 70 | 4 | NA | N |
| Li W[47] 2004 | Asian | 49 | 72 | 40 | 25 | NA | NA | NA | NA | N |
| Gu Y[48] 2004 | Asian | 42 | 54 | 32 | 27 | NA | NA | NA | NA | N |
| Huang XH[49] 2004 | Asian | 24 | 31 | 28 | 34 | NA | NA | NA | NA | N |
| Li Y[50] 2004 | Asian | 33 | 43 | 41 | 33 | NA | NA | NA | NA | N |
| Sreeja[51] 2005 | Indian | 83 | 36 | 61 | 24 | 90 | 29 | 75 | 10 | NA | N |
| Adorne[52] 2005 | Mixed | 21 | 13 | 34 | 16 | NA | NA | NA | NA | N |
| Cote[53] 2005 | Caucasian | 103 | 103 | 80 | 73 | 152 | 43 | 124 | 25 | 71 | 1 |
| Brennan[54] 2005 | Caucasian | 962 | 947 | 709 | 666 | 1,636 | 316 | 1,181 | 230 | NA | N |
| Li DR[55] 2005 | Asian | 28 | 35 | 6 | 10 | NA | NA | NA | NA | N |
| Qiao GB[56] 2005 | Asian | 67 | 108 | 63 | 55 | NA | NA | NA | NA | N |
| Yuan TZ[57] 2005 | Asian | NA | NA | NA | NA | 28 | 70 | 33 | 19 | NA | N |
| Luo CL[58] 2005 | Asian | 14 | 28 | 12 | 22 | NA | NA | NA | NA | N |
| Li DR[59] 2005 | Asian | 46 | 52 | 25 | 27 | NA | NA | NA | NA | N |
| Liang GT[60] 2005 | Asian | NA | NA | NA | NA | NA | NA | NA | 69 | 5 |
| Gao ZL[61] 2005 | Asian | NA | NA | NA | NA | NA | NA | NA | 49 | 4 |

**Table:** Supplemental Table 6 Genotype frequencies of the GSTM1, GSTT1, and GSTP1 Ile105Val polymorphisms between smoking status and lung cancer control groups.
| Year   | Study Type | Country   | Age | 
|--------|------------|-----------|-----| 
| 1993   | No-smoking | Caucasian | 4   | 
| 1993   | No-smoking | Mixed     | 6   | 
| 1997   | No-smoking | Asian     | 3   | 
| 1997   | No-smoking | Mixed     | 5   | 
| 1997   | No-smoking | Asian     | 5   | 
| 1997   | No-smoking | Mixed     | 3   | 
| 1997   | No-smoking | Asian     | 18  | 
| 1998   | No-smoking | Caucasian | 47  | 
| 1998   | No-smoking | Mixed     | 2   | 
| 1999   | No-smoking | Asian     | 7   | 
| 1999   | No-smoking | Asian     | 12  | 
| 2000   | No-smoking | African   | 4   | 
| 2000   | No-smoking | Caucasian | 56  | 
| 2001   | No-smoking | Asian     | 10  | 
| 2001   | No-smoking | Caucasian | 55  | 
| 2001   | No-smoking | Caucasian | 35  | 
| 2001   | No-smoking | Caucasian | 22  | 
| 2002   | No-smoking | Caucasian | 7   |
| Last Name  | Year | Region | Gender | Age | Length | Height | Weight | Other Notes |
|-----------|------|--------|--------|-----|--------|--------|--------|-------------|
| Sunaga    | 2002 | Asian  | Male   | 35  | 40     | 36     | 13     | NA          |
| Zhang     | 2002 | Asian  | Male   | 6   | 8      | 14     | 14     | NA          |
| Zhang     | 2002 | Asian  | Male   | 18  | 39     | 48     | 52     | 30          |
| Nie       | 2002 | Asian  | Male   | NA  | NA     | NA     | NA     | 30          |
| Wang      | 2003 | Asian  | Female | NA  | NA     | NA     | NA     | 30          |
| Kiyohara  | 2003 | Asian  | Female | 64  | 4      | 124    | 135    | NA          |
| Wang      | 2003 | Asian  | Male   | 41  | 53     | 53     | 52     | NA          |
| Nazar-Stewart | 2003 | Mixed  | Male   | 4   | 7      | 65     | 74     | 10          |
| Taioli    | 2003 | Caucasian | Male   | 14  | 18     | 288    | 285    | 16          |
| Liu       | 2003 | Asian  | Male   | NA  | NA     | NA     | NA     | 35          |
| Wang      | 2003 | Asian  | Male   | 64  | 4      | 124    | 135    | NA          |
| Ruano-Ravina | 2003 | Caucasian | Male   | 1   | 9      | 42     | 35     | 7           |
| Xian      | 2004 | Asian  | Male   | 11  | 25     | 37     | 39     | NA          |
| Chen      | 2004 | Asian  | Male   | 14  | 15     | 29     | 8      | NA          |
| Wang      | 2004 | Caucasian | Male   | 19  | 23     | 152    | 180    | 33          |
| Habalova  | 2004 | Caucasian | Female | 6  | 5      | 29     | 33     | NA          |
| Alexandrie | 2004 | Caucasian | Female | 13 | 18     | 99     | 133    | 26          |
| Belogubova | 2004 | Caucasian | Female | 7  | 12     | 146    | 144    | 12          |
| Schneider | 2004 | Caucasian | Female | 191 | 207    | 253    | 216    | 330         |
| Gallegos-Arceola | 2003-2004 | Mixed | Male   | NA  | NA     | NA     | NA     | 2           |
| Li       | 2004 | Asian  | Male   | 41  | 55     | 65     | 70     | NA          |
| Gu Y      | 2004 | Asian  | Male   | 28  | 35     | 60     | 48     | NA          |
| Huang X    | 2004 | Asian  | Male   | 11  | 25     | 37     | 39     | NA          |
| Li Y        | 2004 | Asian  | Female | 7   | 20     | 36     | 28     | NA          |
| Sreeraj    | 2005 | Indian  | Male   | 17  | 10     | 46     | 15     | 24          |
| Adoni      | 2005 | Indian  | Male   | 9   | 12     | 33     | 20     | NA          |
| Wenzlaff    | 2005 | Caucasian | Male   | 62  | 69     | 70     | 77     | 100         |
| Wenzlaff    | 2005 | African | Male   | 20  | 9      | 22     | 8      | 25          |
| Brennan    | 2005 | Caucasian | Female | 81  | 75     | 388    | 320    | 139         |
| Li DR      | 2005 | Asian  | Male   | 14  | 22     | 33     | 17     | NA          |
| Qiao GB     | 2005 | Asian  | Male   | 17  | 21     | 41     | 40     | NA          |
| Yuan T      | 2005 | Asian  | Male   | 8   | 14     | 29     | 28     | NA          |
| Luo CL      | 2005 | Asian  | Female | 4   | 17     | 18     | 40     | NA          |
| Li DR      | 2005 | Asian  | Male   | 29  | 23     | 62     | 38     | NA          |
| Liang G     | 2005 | Asian  | Female | 43  | 36     | 76     | 55     | NA          |
| Guo ZL      | 2005 | Asian  | Male   | 20  | 9      | 22     | 24     | NA          |
| Miller     | 2006 | Caucasian | Female | 85  | 1      | 25     | 22     | NA          |
| Qian        | 2006 | Asian  | Male   | 18  | 4      | 22     | 24     | NA          |
| Chang F     | 2006 | Asian  | Male   | 18  | 44     | 34     | 62     | NA          |
| Wang QM     | 2006 | Asian  | Male   | 9   | 10     | 12     | 7      | NA          |
| Zhang T      | 2006 | Asian  | Female | 17  | 15     | 26     | 29     | NA          |
| Osawa S     | 2007 | Asian  | Female | 17  | 15     | 26     | 29     | NA          |
| Hu X        | 2007 | Asian  | Female | 8   | 34     | 20     | 28     | NA          |
| Wang Y      | 2007 | Asian  | Male   | 8   | 13     | 17     | 23     | NA          |
| Yoon        | 2007 | Asian  | Female | 13  | 17     | 12     | 26     | NA          |
| Chen H      | 2008 | Asian  | Male   | 13  | 26     | 120    | 126    | NA          |
| Qi XS       | 2008 | Asian  | Female | 13  | 26     | 120    | 126    | NA          |
| Hou Y       | 2008 | Asian  | Female | 7   | 8      | 12     | 17     | NA          |
| Lam M       | 2009 | African | Female | 6   | 6      | 25     | 23     | NA          |
| Kumar       | 2009 | Indian  | Male   | 7   | 5      | 89     | 63     | 7           |
| Qi XS       | 2009 | Asian  | Female | 1   | 4      | 5      | 8      | NA          |
| Yin Q      | 2009 | Asian  | Female | 13  | 26     | 120    | 126    | NA          |
| Chen H      | 2009 | Asian  | Male   | 13  | 26     | 120    | 126    | NA          |
| Liu J       | 2009 | Asian  | Female | 13  | 26     | 120    | 126    | NA          |
| Jin J       | 2010 | Asian  | Male   | 12  | 25     | 35     | 28     | NA          |
| Cabral      | 2010 | Mixed  | Female | 4   | 5      | 34     | 44     | 4           |
| Altiminski  | 2010 | Caucasian | Female | 6   | 1      | 29     | 7      | 6           |
| Song B      | 2010 | Asian  | Female | 16  | 22     | 34     | 26     | NA          |
| Zheng D     | 2010 | Asian  | Female | 49  | 36     | 68     | 96     | NA          |
| Zhu X       | 2010 | Asian  | Female | 67  | 93     | 88     | 72     | NA          |
| Jia S       | 2010 | Asian  | Female | 43  | 36     | 76     | 55     | NA          |
| Ihsan       | 2011 | Indian  | Male   | 31  | 25     | 91     | 60     | 49          |
| Fowke       | 2011 | Asian  | Male   | 98  | 110    | 329    | 456    | 100         |
| Bai T       | 2011 | Asian  | Male   | 9   | 15     | 13     | 9      | NA          |
| Zhang J      | 2011 | Asian  | Male   | 43  | 36     | 76     | 55     | NA          |
| Zhou X       | 2011 | Asian  | Male   | 10  | 25     | 20     | 21     | 14          |
| Fan J       | 2011 | Asian  | Female | 10  | 25     | 20     | 21     | 14          |

**Notes:**
- NA: Not available
- Mixed: Mixed race
- Asian: Asian ethnicity
- Caucasian: Caucasian ethnicity
- African: African ethnicity
- Male: Male gender
- Female: Female gender
| Last Name | Year | Population | CI1 | CI2 | CI3 | CI4 | CI5 | CI6 | CI7 | CI8 | CI9 | CI10 | CI11 | CI12 | CI13 |
|-----------|------|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| Bai TY    | 2011 | Asian      | 19  | 26  | 61  | 54  | 25  | 20  | 63  | 52  | 28  | 1   | 2    |      |      |
| Du GB     | 2011 | Asian      | 17  | 32  | 36  | 46  | 22  | 27  | 45  | 37  | NA  | N   |      |      |      |
| López-Cima| 2012 | Caucasian  | 26  | 25  | 102 | 119 | 40  | 11  | 185 | 36  | 22  | 2   | 2    |      |      |
| Liu       | 2012 | Asian      | 63  | 42  | 123 | 52  | NA  | NA  | NA  | NA  | NA  | N   |      |      |      |
| Han RL    | 2012 | Asian      | 26  | 19  | 61  | 54  | NA  | NA  | NA  | NA  | NA  | N   |      |      |      |
| Yao ZG    | 2012 | Asian      | 16  | 29  | 40  | 38  | NA  | NA  | NA  | NA  | NA  | N   |      |      |      |
| Chen CM   | 2012 | Asian      | 20  | 34  | 29  | 47  | NA  | NA  | NA  | NA  | NA  | N   |      |      |      |
| Shukla     | 2012 | Indian     | 32  | 37  | 106 | 64  | 51  | 18  | 127 | 43  | NA  | N   |      |      |      |
| Lv XL     | 2013 | Asian      | NA  | NA  | NA  | NA  | NA  | NA  | NA  | NA  | NA  | 24  | 1   |      |      |
| Lu QG     | 2013 | Asian      | 8   | 28  | 38  | 38  | NA  | NA  | NA  | NA  | NA  | N   |      |      |      |
| Pan        | 2014 | Asian      | 114 | 170 | 162 | 122 | 136 | 148 | 171 | 113 | NA  | N   |      |      |      |
| Jiang      | 2014 | Asian      | 130 | 136 | 48  | 58  | 120 | 111 | 73  | 50  | 51  | 11  |      |      |      |
| Wang       | 2015 | Asian      | NA  | NA  | NA  | NA  | NA  | NA  | NA  | NA  | NA  | 25  | 2   |      |      |
| Peddireddy | 2016 | Indian     | 76  | 22  | 133 | 42  | 89  | 9   | 158 | 17  | NA  | N   |      |      |      |
| Liu AS    | 2017 | Asian      | 7   | 15  | 32  | 8   | NA  | NA  | NA  | NA  | NA  | N   |      |      |      |
| He         | 2018 | Asian      | 113 | 86  | 167 | 85  | NA  | NA  | NA  | NA  | NA  | N   |      |      |      |

NA = not available, * = Ile/Val + Val/Val
Supplemental Table 7: Genotype frequencies of the *GSTM1, GSTT1, and GSTP1* Ile105Val polymorphisms between lung cancer and control groups by gender

| First author/Year | Ethnicity | Case | Control | Case | Control | Case | Control |
|-------------------|-----------|------|---------|------|---------|------|---------|
| **GSTM1 genotype distribution** | **GSTT1 genotype distribution** | **GSTP1 Ile105Val genotypes** |
| **Gender** | | | | | | | | |
| **Male** | | | | | | | | |
| Seidegård[2] 1990 | Mixed | 25 | 45 | 27 | 27 | NA | NA | NA | NA |
| Brockmöller[7] 1993 | Caucasian | 43 | 46 | 108 | 105 | NA | NA | NA | NA |
| London[13] 1995 | Mixed | 111 | 89 | 270 | 205 | NA | NA | NA | NA |
| Kihara[19] 1995 | Asian | 150 | 185 | 150 | 153 | NA | NA | NA | NA |
| Kelsey[20] 1997 | Mixed | 80 | 46 | 127 | 65 | 57 | 6 | 24 | 164 | 28 | NA | NA | NA |
| Ryberg[24] 1997 | Caucasian | 61 | 74 | 179 | 163 | NA | NA | NA | 53 | 63 |
| Sun[26] 1997 | Asian | 38 | 101 | 129 | 139 | NA | NA | NA | NA | NA |
| Kihara[3] 1999 | Asian | 152 | 206 | 126 | 131 | NA | NA | NA | 263 | 78 |
| Woodson[20] 1999 | Caucasian | 159 | 160 | 171 | 162 | NA | NA | NA | NA | NA |
| Kiyohara[43] 1999 | Asian | 152 | 206 | 126 | 131 | NA | NA | NA | 263 | 78 |
| Woodson[20] 1999 | Caucasian | 159 | 160 | 171 | 162 | NA | NA | NA | NA | NA |
| Kiyohara[43] 1999 | Asian | 152 | 206 | 126 | 131 | NA | NA | NA | 263 | 78 |
| **Female** | | | | | | | | | |
| Seidegård[2] 1990 | Mixed | 22 | 33 | 39 | 21 | NA | NA | NA | NA |
| Brockmöller[7] 1993 | Caucasian | 43 | 46 | 108 | 105 | NA | NA | NA | NA |
| London[13] 1995 | Mixed | 111 | 89 | 270 | 205 | NA | NA | NA | NA |
| Kihara[19] 1995 | Asian | 150 | 185 | 150 | 153 | NA | NA | NA | NA |
| Kelsey[20] 1997 | Mixed | 80 | 46 | 127 | 65 | 57 | 6 | 24 | 164 | 28 | NA | NA | NA |
| Ryberg[24] 1997 | Caucasian | 61 | 74 | 179 | 163 | NA | NA | NA | 53 | 63 |
| Sun[26] 1997 | Asian | 38 | 101 | 129 | 139 | NA | NA | NA | NA | NA |
| Kihara[3] 1999 | Asian | 152 | 206 | 126 | 131 | NA | NA | NA | 263 | 78 |
| Woodson[20] 1999 | Caucasian | 159 | 160 | 171 | 162 | NA | NA | NA | NA | NA |
| Kiyohara[43] 1999 | Asian | 152 | 206 | 126 | 131 | NA | NA | NA | 263 | 78 |
| Woodson[20] 1999 | Caucasian | 159 | 160 | 171 | 162 | NA | NA | NA | NA | NA |
| Kiyohara[43] 1999 | Asian | 152 | 206 | 126 | 131 | NA | NA | NA | 263 | 78 |
| Woodson[20] 1999 | Caucasian | 159 | 160 | 171 | 162 | NA | NA | NA | NA | NA |
| Kiyohara[43] 1999 | Asian | 152 | 206 | 126 | 131 | NA | NA | NA | 263 | 78 |

*a* Only data for Asian populations was available in this study.

Note: NA = Not available.
| Name       | Year | Ethnicity | N1 | N2 | N3 | N4 | N5 | N6 | N7 | N8 | N9 | N10 |
|------------|------|-----------|----|----|----|----|----|----|----|----|----|-----|
| Chan       | 2005 | Asian     | 6  | 7  | 12 | 11 | NA | NA | NA | NA | NA | NA  |
| Liang      | 2005 | Asian     | NA | NA | NA | NA | NA | NA | NA | NA | NA | 37  |
| Larsen     | 2006 | Caucasian | 137| 171| 80 | 120| 245| 61 | 164| 36 | 46 | 124 |
| Miller     | 2006 | Caucasian | NA | NA | NA | NA | NA | NA | NA | NA | 437 | 389 |
| Sørensen   | 2007 | Caucasian | 96 | 105| 168| 172| 31 | 288| 52 | 84 | 87 |
| Yoon       | 2008 | Asian     | NA | NA | NA | NA | NA | NA | NA | NA | 137 | 65 |
| Zupa       | 2009 | Caucasian | 9  | 3  | 31 | 34 | NA | NA | NA | NA | NA |
| Lam        | 2009 | Mixed     | 34 | 42 | 113| 130| 52 | 24 | 185| 58 | NA |
| Cote       | 2009 | Caucasian | 178| 210| 206| 197| 311| 77 | 324| 82 | 171| 177 |
| Cote       | 2009 | African   | 78 | 36 | 93 | 28 | 87 | 28 | 95 | 26 | 28 | 61 |
| Liu JN     | 2009 | Asian     | NA | NA | NA | NA | 20 | 23 | 36 | 25 | NA |
| Timofeeva  | 2010 | Caucasian | 94 | 126| 210| 262| 184| 35 | 388| 85 | 92 | 106 |
| Cabral     | 2010 | Mixed     | 6  | 13 | 18 | 22 | 15 | 4  | 24 | 16 | NA |
| Zhu XX     | 2010 | Asian     | 67 | 93 | 88 | 72 | NA | NA | NA | NA | NA |
| Young      | 2011 | Caucasian | 85 | 129| 83 | 150| NA | NA | NA | NA | NA |
| Fowke      | 2011 | Asian     | 98 | 110| 329| 456| 100| 108| 403| 381| NA |
| Du GB      | 2011 | Asian     | 12 | 20 | 13 | 23 | 14 | 18 | 20 | 16 | NA |
| Piao       | 2013 | Asian     | 365| 445| 407| 472| 394| 416| 429| 450| NA |
| Pan        | 2014 | Asian     | 96 | 162| 155| 103| 160| 98 | 144| 114| NA |
| Mota       | 2015 | Caucasian | 29 | 17 | 49 | 35 | 31 | 15 | 61 | 23 | 12 | 25 |
| He         | 2018 | Asian     | 45 | 41 | 76 | 29 | NA | NA | NA | NA | NA |

NA = not available, \* = He/Val + Val/Val
## Supplemental Table 8 Genotype frequencies of the combined effects of GSTM1 present/null and GSTT1 present/null between lung cancer and control groups

| First author/Year | Country | Ethnicity | SC | Genotype | A (Controls) | B (Cases) | C (Controls) | D (Cases) | Cc |
|-------------------|---------|-----------|----|----------|-------------|-----------|-------------|-----------|----|   |
| Sharma[171] 2015  | India   | Indian    | HB | GSTM1    | 27 22       | 23 15     | 111 88      | 109 14    |    |   |
| Zhang[221] 2014   | China   | Asian     | HB | GSTM1    | 24 35       | 51 28     | 15 24       | 20 23     |    |   |
| Pan[188] 2014     | China   | Asian     | PB | GSTM1    | 113 121     | 157 91    | 148 133     | 105 17    |    |   |
| Piao[165] 2013    | Korea   | Asian     | PB | GSTM1    | 873 391     | 1197 467  | 1040 456    | 823 38    |    |   |
| Dzian[156] 2012   | Slovak  | Caucasian | HB | GSTM1    | 31 26       | 28 22     | 102 138     | 69 10     |    |   |
| Ada[187] 2012     | Turkey  | Caucasian | HB | GSTM1    | NA NA       | 34 22     | NA NA       | 73 86     |    |   |
| López-Cima[159] 2012 | Australia | Caucasian | HB | GSTM1    | 71 82       | 87 83     | 327 363     | 304 27    |    |   |
| Liang KC[242] 2012 | China   | Asian     | HB | GSTM1    | NA NA       | 34 19     | NA NA       | NA N.     |    |   |
| Cabral[144] 2010  | Brazil  | Mixed     |    | GSTM1    | 6 14        | 20 27     | 19 23       | 19 23     |    |   |
| Fan J[272] 2011   | China   | Asian     | HB | GSTM1    | 18 14       | 34 19     | 15 16       | 11 17     |    |   |
| Du GB[169] 2011   | China   | Asian     | HB | GSTM1    | NA NA       | 36 30     | NA NA       | 31 28     |    |   |
| Matakova[133] 2009 | Slovak  | Caucasian | HB | GSTM1    | 21 20       | 20 26     | 74 79       | 45 95     |    |   |
| Sreeja[127] 2008  | India   | Indian    | HB | GSTM1    | NA NA       | 29 10     | NA NA       | 102 12    |    |   |
| Sobu[127] 2008    | India   | Indian    | HB | GSTM1    | 15 13       | 12 7      | 51 46       | 73 85     |    |   |
| Qi X[220] 2008    | China   | Asian     | HB | GSTM1    | 7 10        | 10 17     | 24 24       | 12 21     |    |   |
| Honmi[128] 2008   | Brazil  | Mixed     | HB | GSTM1    | NA NA       | 12 13     | NA NA       | 94 11     |    |   |
| Li SF[268] 2007   | China   | Asian     | HB | GSTM1    | 7 18        | 10 30     | 14 27       | 11 28     |    |   |
| Chen[114] 2006    | China   | Asian     | HB | GSTM1    | 23 41       | 36 44     | 24 45       | 14 67     |    |   |
| Yao W[165] 2006   | China   | Asian     | HB | GSTM1    | 18 29       | 26 25     | 19 20       | 14 33     |    |   |
| Cote[100] 2005    | USA     | Caucasian | PB | GSTM1    | NA NA       | 87 124    | NA NA       | 19 29     |    |   |
| Cote[110] 2005    | USA     | African   | PB | GSTM1    | NA NA       | 53 67     | NA NA       | 8 6       |    |   |
| Wenzlaff[105] 2005 | USA     | Caucasian | PB | GSTM1    | NA NA       | 48 56     | NA NA       | 12 17     |    |   |
| Wenzlaff[105] 2005 | USA     | African   | PB | GSTM1    | NA NA       | 16 14     | NA NA       | 1 0       |    |   |
| Brennan[111] 2005 | Poland  | Caucasian | PB | GSTM1    | NA NA       | 175 171   | NA NA       | 861 92    |    |   |
| Sorensen[101] 2004 | Denmark | Caucasian | PB | GSTM1    | 17 9        | 20 7      | 120 154     | 97 95     |    |   |
| Cao Y[252] 2004   | China   | Asian     | HB | GSTM1    | 26 41       | 43 46     | 22 49       | 13 69     |    |   |
| Wang[198] 2004    | USA     | Caucasian | HB | GSTM1    | NA NA       | 77 112    | NA NA       | NA N.     |    |   |
| Vines[144] 2004   | Multiple | Caucasian | ND | GSTM1    | 169 266     | 196 276   | 856 1139    | 746 10    |    |   |
| Wang J[233] 2003  | China   | Asian     | HB | GSTM1    | 17 25       | 36 29     | 33 31       | 26 34     |    |   |
| Cajas-Salazar[184] 2003 | USA   | Caucasian | HB | GSTM1    | NA NA       | 16 9      | NA NA       | 47 65     |    |   |
| Ruano-Ravina[184] 2003 | Spain | Caucasian | HB | GSTM1    | 12 18       | 15 28     | 57 59       | 41 82     |    |   |
| Dialyna[77] 2003  | Greece  | Caucasian | HB | GSTM1    | 12 7        | 9 13      | 54 83       | 47 75     |    |   |
| Stücker[188] 2002 | France  | Caucasian | HB | GSTM1    | NA NA       | 111 98    | NA NA       | 25 19     |    |   |
| Zhang JK[193] 2002 | China   | Asian     | HB | GSTM1    | 7 11        | 12 10     | 15 20       | 7 14      |    |   |
| Zhao[59] 2001     | China   | Asian     | HB | GSTM1    | NA NA       | 82 66     | NA NA       | NA N.     |    |   |
| London[266] 2000  | China   | Asian     | PB | GSTM1    | NA NA       | 85 275    | NA NA       | NA N.     |    |   |
| Malats[260] 2000  | Multiple | Caucasian | PB | GSTM1    | 15 24       | 17 20     | 49 33       | 41 44     |    |   |
| Spitz[252] 2000   | USA     | Caucasian | HB | GSTM1    | NA NA       | 54 42     | NA NA       | NA N.     |    |   |
| Salagovic[110] 1998 | Slovak | Caucasian | PB | GSTM1    | NA NA       | 10 17     | NA NA       | NA N.     |    |   |
| Saarikoski[130] 1998 | Finland | Caucasian | PB | GSTM1    | 23 10       | 16 15     | 82 122      | 96 13     |    |   |
| To-Figueras[24] 1997 | Spain  | Caucasian | HB+PB | GSTM1 present/GSTT1 null | 16 32       | 23 32     | 70 123      | 51 12     |    |   |
| El-Zein[22] 1997  | USA     | Mixed     | HB | GSTM1    | NA NA       | 6 2       | NA NA       | NA N.     |    |   |
| Jourenkova[23] 1997 | France  | Caucasian | HB | GSTM1    | NA NA       | 15 12     | NA NA       | NA N.     |    |   |
| Kelsey[150] 1997  | USA     | African   | HB | GSTM1    | NA NA       | 9 8       | NA NA       | NA N.     |    |   |
| Kelsey[150] 1997  | USA     | Mixed     | PB | GSTM1    | NA NA       | 5 5       | NA NA       | NA N.     |    |   |

NA = not available, a = Ile/Val + Val/Val, A = M1 GSTM1 present/GSTT1 null, B = GSTM1 null/GSTT1 null, C = GSTM1 null/GSTT1 present, D = GSTM1 present/GSTT1 present, E = GSTM1 present/GSTT1 null + GSTM1 null/GSTT1 present, F = GSTM1 present/GSTT1 present + GSTM1 present/GSTT1 null + GSTM1 null/GSTT1 present
| First author/Year | Ethnicity | Case GSTM1 present/GSTM1 null | Case GSTP1 Ile/Ile | Control GSTM1 present/GSTM1 null | Control GSTP1 Val | Total one risk genotype Case | Control | Case | Control |
|-------------------|-----------|-------------------------------|-------------------|----------------------------------|-----------------|-----------------------------|---------|------|---------|
| Sharma[171] 2015  | Indian    | 109                           | 148               | 116                              | 27              | 19                         | 143     | 104  |
| López-Cima[139] 2012 | Caucasian | 161                           | 146               | 184                              | 175             | 212                         | 209     | 396  |
| Dziar[156] 2012   | Caucasian | 51                            | 69                | 64                               | 84              | 49                         | 61      | 113  |
| Ad[179] 2012      | Caucasian | 61                            | 63                | NA                               | NA              | NA                         | NA      | 114  |
| Matakoval[15] 2009 | Caucasian | 35                            | 66                | 46                               | 60              | 31                         | 49      | 77   |
| Honma[128] 2008   | Mixed     | 47                            | 50                | 35                               | 55              | 62                         | 87      | 97   |
| Sreeja[132] 2008  | Indian    | 73                            | 86                | 45                               | 49              | 66                         | 61      | 111  |
| Sobti[127] 2008   | Indian    | 50                            | 40                | 28                               | 22              | 38                         | 58      | 66   |
| Chen[114] 2006    | Asian     | 26                            | 74                | 40                               | 69              | 11                         | 34      | 51   |
| Wenzlaff[109] 2005 | Caucasian | 16                            | 30                | NA                               | NA              | NA                         | NA      | 55   |
| Wenzlaff[109] 2005 | African   | 5                             | 5                 | NA                               | NA              | NA                         | NA      | 14   |
| Cote[109] 2005    | Caucasian | 40                            | 54                | NA                               | NA              | NA                         | NA      | 118  |
| Cote[110] 2005    | African   | 10                            | 29                | NA                               | NA              | NA                         | NA      | 58   |
| Reszka[129] 2003  | Caucasian | 48                            | 47                | NA                               | NA              | NA                         | 62      | 90   |
| Wang[73] 2003     | Asian     | 27                            | 45                | 40                               | 39              | 16                         | 14      | 56   |
| Perera[67] 2002   | Caucasian | 13                            | 43                | 21                               | 39              | 26                         | 48      | 47   |
| Stäcker[68] 2002  | Caucasian | 99                            | 124               | NA                               | NA              | NA                         | NA      | 133  |
| Miller[71] 2002   | Caucasian | 158                           | 185               | 195                              | 221             | 186                        | 238     | 381  |
| To-Figueras[69] 1999 | Caucasian | 37                            | 73                | 46                               | 81              | 31                         | 94      | 77   |
| Jourenkova-Mironova[37] 1998 | Caucasian | 31                            | 36                | 35                               | 48              | 35                         | 45      | 70   |
| Ryberg[28] 1997   | Caucasian | 25                            | 81                | 24                               | 72              | 35                         | 76      | 59   |

Val¹ = Ile/Val + Val/Val, Total one risk genotype = GSTM1 null/ GSTP1 Ile/Ile + GSTM1 present/GSTP1 Val¹, All risk genotypes = GSTM1 null/ GSTP1 Ile/Ile + GSTM1 present/GSTP1 Val¹ + GSTM1 null/ GSTP1 Val¹, NA = not available
Supplemental Table 10 Genotype frequencies of the combined effects of \textit{GSTT1} present/null and \textit{GSTP1} Ile105Val between lung cancer and control groups

| First author/Year | Ethnicity | \textit{GSTT1} present/ null Case | \textit{GSTP1} Ile105Val Case | Total one risk genotype Case | First author/Year | Ethnicity | \textit{GSTT1} present/ null Case | \textit{GSTP1} Ile105Val Case | Total one risk genotype Case |
|-------------------|-----------|----------------------------------|-------------------------------|-----------------------------|-------------------|-----------|----------------------------------|-------------------------------|-----------------------------|
| Sharma\textsuperscript{[171]} 2015 | Indian | 184 | 201 | 39 | 32 | 36 | 32 | 75 | 64 |
| Dzian\textsuperscript{[136]} 2012 | Caucasian | 85 | 123 | 30 | 30 | 86 | 119 | 116 | 149 |
| López-Cima\textsuperscript{[139]} 2012 | Caucasian | 276 | 256 | 69 | 65 | 341 | 352 | 410 | 417 |
| Ada\textsuperscript{[177]} 2012 | Caucasian | 105 | 106 | NA | NA | 85 | 109 |
| Matakoval\textsuperscript{[137]} 2009 | Caucasian | 60 | 104 | 21 | 22 | 59 | 70 | 80 | 92 |
| Sreeja\textsuperscript{[132]} 2008 | Indian | 86 | 117 | 32 | 17 | 59 | 66 | 91 | 83 |
| Honma\textsuperscript{[128]} 2008 | Mixed | 71 | 93 | 11 | 12 | 102 | 137 | 113 | 149 |
| Sobti\textsuperscript{[127]} 2008 | Indian | 66 | 57 | 12 | 5 | 58 | 74 | 70 | 79 |
| Chen\textsuperscript{[114]} 2006 | Asian | 31 | 79 | 35 | 64 | 7 | 33 | 42 | 97 |
| Wenzlaff\textsuperscript{[109]} 2005 | Caucasian | 26 | 46 | NA | NA | NA | NA | 63 | 80 |
| Wenzlaff\textsuperscript{[109]} 2005 | African | 7 | 5 | NA | NA | NA | NA | 15 | 19 |
| Cote\textsuperscript{[107]} 2005 | Caucasian | 58 | 82 | NA | NA | NA | NA | 124 | 171 |
| Cote\textsuperscript{[107]} 2005 | African | 12 | 28 | NA | NA | NA | NA | 61 | 72 |
| Sørensen\textsuperscript{[100]} 2004 | Caucasian | 107 | 107 | 10 | 8 | 110 | 142 | 120 | 150 |
| Wang\textsuperscript{[89]} 2003 | Asian | 32 | 45 | 35 | 39 | 27 | 20 | 62 | 59 |
| Stücker\textsuperscript{[68]} 2002 | Caucasian | 188 | 197 | NA | NA | NA | NA | 58 | 62 |
| To-Figueras\textsuperscript{[40]} 1999 | Caucasian | 63 | 117 | 20 | 37 | 60 | 144 | 80 | 181 |

NA = not available, Val\textsuperscript{1} = Ile/Val + Val/Val, Total one risk genotype = \textit{GSTT1} null/ \textit{GSTP1} Ile/Ile + \textit{GSTT1} present/ \textit{GSTP1} Val\textsuperscript{1}, All risk genotypes = \textit{GSTT1} null/ \textit{GSTP1} Ile/Ile + \textit{GSTT1} present/ \textit{GSTP1} Val\textsuperscript{1} + \textit{GSTT1} null/ \textit{GSTP1} Val\textsuperscript{1}
**Supplemental Table 11** Genotype frequencies of the combined effects of *GSTM1*, *GSTT1* and *GSTP1* Ile105Val polymorphisms between lung cancer and control groups

| First author/Year | A  | B  | C  | D  | E  | F  | G  | H  |
|-------------------|----|----|----|----|----|----|----|----|
| Sharma[171] 2015  | 87 | 128| NA | NA | NA | NA | NA | NA |
| Dzian[156] 2012   | 33 | 50 | 52 | 73 | 18 | 19 | 36 | 54 |
| Ada[157] 2012     | 51 | 50 | NA | NA | NA | NA | NA | NA |
| Sørensen[122] 2007| 139| 277| NA | NA | NA | NA | 218| 382|
| Chen[114] 2006    | 13 | 44 | NA | NA | NA | NA | 32 | 88 |
| Cote[110] 2005    | 28 | 42 | NA | NA | NA | NA | 97 | 134|
| Cote[110] 2005    | 9  | 20 | NA | NA | NA | NA | 47 | 62 |

NA = not available, A = *M1* Present/*T1* Present/*Ile*/Ile, B = *M1* Null/*T1* Present/*Ile*/Ile, C = *M1* Present/*T1* Null/*Ile*/Ile, D = *M1* Present/*T1* Present/*Ile*/Ile, E = *M1* Null/*T1* Present/*Ile*/Ile + *M1* Present/*T1* Null/*Ile*/Ile + *M1* Present/*T1* Present/*Ile*/Ile Val¹, F = *M1* Null/*T1* Null/*Ile*/Ile, G = *M1* Null/*T1* Present/*Ile*/Ile Val¹, H = *M1* Present/*T1* Null/*Ile*/Ile Val¹, I = *M1* Null/*T1* Null/*Ile*/Ile + *M1* Null/*T1* Present/*Ile*/Ile Val¹ + *M1* Present/*T1* Null/*Ile*/Ile Val¹, J = *M1* Null/*T1* Null/*Ile*/Ile Val¹, Val¹: Ile/Val + Val/Val.
**Supplemental Table 12** Scale for quality assessment of molecular association studies of lung cancer

| Criterion                                                                 | Score |
|---------------------------------------------------------------------------|-------|
| Source of case                                                            |       |
| Selected from population or cancer registry                               | 3     |
| Selected from hospital                                                    | 2     |
| Selected from pathology archives, but without description                 | 1     |
| Not described                                                             | 0     |
| Source of control                                                         |       |
| Population-based                                                          | 3     |
| Blood donors or volunteers                                                | 2     |
| Hospital-based                                                            | 1     |
| Not described                                                             | 0     |
| Ascertainment of cancer                                                   |       |
| Histological or pathological confirmation                                 | 2     |
| Diagnosis of lung cancer by patient medical record                        | 1     |
| Not described                                                             | 0     |
| Ascertainment of control                                                  |       |
| Controls were tested to screen out lung cancer                             | 2     |
| Controls were subjects who did not report lung cancer, no objective testing| 1     |
| Not described                                                             | 0     |
| Matching                                                                  |       |
| Controls matched with cases by age and sex                                | 2     |
| Controls matched with cases only by age or sex                            | 1     |
| Not matched or not described                                              | 0     |
| Genotyping examination                                                    |       |
| Genotyping done blindly and quality control                               | 2     |
| Only genotyping done blindly or quality control                           | 1     |
| Unblinded and without quality control                                     | 0     |
| Specimens used for determining genotypes                                  |       |
| Blood cells or normal tissues                                             | 1     |
| Tumor tissues or exfoliated cells of tissue                               | 0     |
| HWE                                                                       |       |
| HWE in the control group                                                  | 1     |
| Hardy-Weinberg disequilibrium in the control group                        | 0     |
| Association assessment                                                    |       |
| Assess association between genotypes and lung cancer with appropriate statistics and adjustment for confounders | 2     |
| Assess association between genotypes and lung cancer with appropriate statistics without adjustment for confounders | 1     |
| Inappropriate statistics used                                             | 0     |
| Total sample size                                                         |       |
| >1000                                                                     | 3     |
| 500-1000                                                                  | 2     |
| Range | Count |
|-------|-------|
| 200-500 | 1     |
| <200   | 0     |

HWE: Hardy-Weinberg equilibrium
**Supplemental Table 13** Meta-analysis of the association of \textit{GSTM1} polymorphism with risk of lung cancer

| Variable       | n     | Cases/Controls | Test of association | Test of heterogeneity | Model         |
|----------------|-------|----------------|---------------------|-----------------------|---------------|
|                |       |                | OR (95% CI)         | \(P_h\)               | \(I^2\) (%)   |
| **Test of association** |       |                |                     |                       |               |
| Overall        | 205   | 45,726/58,788  | \(1.24 (1.19–1.30)\) | <0.001                | 58.5          | Random-effect |
| **Ethnicity**  |       |                |                     |                       |               |
| African        | 8     | 698/916        | \(1.20 (0.96–1.50)\) | 0.739                 | 0.0           | Fixed-effect  |
| Indian         | 16    | 2,998/3,360    | \(1.17 (0.93–1.46)\) | <0.001                | 76.6          | Random-effect |
| Asian          | 95    | 18,240/19,218  | \(1.43 (1.33–1.53)\) | <0.001                | 54.8          | Random-effect |
| Caucasian      | 66    | 19,961/30,395  | \(1.07 (1.01–1.13)\) | 0.001                 | 39.4          | Random-effect |
| **Country**    |       |                |                     |                       |               |
| China          | 74    | 10,271/13,195  | \(1.52 (1.40–1.65)\) | <0.001                | 53.3          | Random-effect |
| Japan          | 13    | 2,886/2,952    | \(1.30 (1.17–1.44)\) | 0.617                 | 0.0           | Fixed-effect  |
| Korea          | 4     | 4,504/2,304    | \(1.09 (0.99–1.21)\) | 0.712                 | 0.0           | Fixed-effect  |
| North India    | 11    | 2,059/2,423    | \(1.15 (0.84–1.58)\) | <0.001                | 83.8          | Random-effect |
| South India    | 4     | 689/667        | \(1.20 (0.95–1.53)\) | 0.686                 | 0.0           | Fixed-effect  |
| **Source of control** |     |                |                     |                       |               |
| HB             | 116   | 21,670/25,884  | \(1.30 (1.21–1.39)\) | <0.001                | 64.0          | Random-effect |
| PB             | 41    | 12,988/15,069  | \(1.14 (1.05–1.24)\) | <0.001                | 55.6          | Random-effect |
| **Matching**   |       |                |                     |                       |               |
| Yes            | 90    | 19,316/25,042  | \(1.18 (1.10–1.25)\) | <0.001                | 55.1          | Random-effect |
| No             | 115   | 26,410/33,746  | \(1.30 (1.23–1.39)\) | <0.001                | 60.8          | Random-effect |
| **Quality score** |     |                |                     |                       |               |
| > 12           | 64    | 22,879/29,881  | \(1.14 (1.07–1.21)\) | <0.001                | 57.8          | Random-effect |
| \(\leq 12\)   | 141   | 22,847/28,907  | \(1.31 (1.24–1.39)\) | <0.001                | 56.9          | Random-effect |
| **Sample size** |       |                |                     |                       |               |
| > 200          | 154   | 42,466/54,925  | \(1.21 (1.16–1.27)\) | <0.001                | 63.2          | Random-effect |
| \(\leq 200\)  | 51    | 3,260/3,863    | \(1.42 (1.29–1.57)\) | 0.127                 | 18.8          | Fixed-effect  |
| **Histological type** |      |                |                     |                       |               |
| SCLC           | 39    | 1,511/11,179   | \(1.38 (1.16–1.63)\) | <0.001                | 50.2          | Random-effect |
| SCLC/Asian     | 11    | 364/2,477      | \(1.43 (1.04–1.97)\) | 0.062                 | 43.3          | Random-effect |
| SCLC/Caucasian | 17    | 790/6005       | \(1.33 (1.01–1.76)\) | <0.001                | 65.7          | Random-effect |
| SCLC/Indian    | 4     | 193/817        | \(1.66 (1.21–2.28)\) | 0.852                 | 0.0           | Fixed-effect  |
| LCLC           | 8     | 108/2,403      | \(1.23 (0.83–1.81)\) | 0.145                 | 35.5          | Fixed-effect  |
| SC             | 75    | 7,008/21,733   | \(1.33 (1.22–1.45)\) | <0.001                | 55.2          | Random-effect |
| SC/Asian       | 32    | 2,571/6,485    | \(1.52 (1.38–1.66)\) | 0.292                 | 10.9          | Fixed-effect  |
| SC/Caucasian   | 27    | 2,952/10,513   | \(1.16 (0.97–1.38)\) | <0.001                | 72.6          | Random-effect |
| SC/Indian      | 6     | 711/1,267      | \(1.37 (1.13–1.67)\) | 0.956                 | 0.0           | Fixed-effect  |
| AC             | 71    | 6,542/22,646   | \(1.24 (1.13–1.36)\) | <0.001                | 52.0          | Random-effect |
| AC/Asian       | 29    | 2,490/6,192    | \(1.35 (1.22–1.48)\) | 0.107                 | 25.5          | Fixed-effect  |
| AC/Indian      | 27    | 2,560/11,784   | \(1.07 (0.94–1.22)\) | 0.009                 | 43.5          | Random-effect |
| AC/Indian      | 3     | 373/1,202      | \(1.49 (1.17–1.90)\) | 0.292                 | 19.2          | Fixed-effect  |
| Smoking   | 90     | 14,118/13,575 | 1.27 (1.17–1.39) | <0.001 | 61.7 | Random-effect |
|-----------|--------|---------------|------------------|--------|------|---------------|
| No        | 82     | 4,885/10,612  | 1.36 (1.21–1.53) | <0.001 | 50.4 | Random-effect |
| Gender    | Male   | 39            | 10,409/10,390    | 1.16 (1.06–1.26) | 0.001 | 47.1 | Random-effect |
|           | Female | 32            | 4,303/6,371      | 1.16 (0.98–1.39) | <0.001 | 72.3 | Random-effect |

HB = hospital-based studies, PB = population-based studies, SCLC = small-cell lung cancer, LCLC = large cell lung carcinoma, SC = squamous carcinoma, AC = adenocarcinoma
## Supplemental Table 14

Meta-analysis of the association of *GSTT1* polymorphism with risk of lung cancer

| Variable               | n    | Cases/Controls     | Test of association | Test of heterogeneity | Model          |
|------------------------|------|--------------------|---------------------|-----------------------|----------------|
|                        |      |                    | OR (95% CI)         | \(P_h\)               |                |
|                        |      |                    | \(I^2\) (%)         |                       |                |
| Overall                | 103  | 29,476/35,305      | 1.16 (1.08–1.24)    | <0.001                | 59.2 Random-effect |
| Ethnicity              |      |                    |                     |                       |                |
| African                | 5    | 362/413            | 0.98 (0.70–1.37)    | 0.564                 | 0.0 Fixed-effect |
| Indian                 | 15   | 2,624/2,993        | 1.54 (1.13–2.11)    | <0.001                | 78.5 Random-effect |
| Asian                  | 33   | 9,442/8,865        | 1.23 (1.12–1.36)    | 0.001                 | 49.1 Random-effect |
| Caucasian              | 41   | 14,782/19,972      | 1.05 (0.97–1.14)    | 0.005                 | 40.1 Random-effect |
| Country                |      |                    |                     |                       |                |
| China                  | 24   | 3,766/5,535        | 1.31 (1.16–1.49)    | 0.004                 | 48.9 Random-effect |
| Japan                  | 4    | 938/822            | 1.22 (1.01–1.47)    | 0.352                 | 8.2 Fixed-effect |
| Korea                  | 3    | 4,418/2,240        | 1.08 (0.97–1.19)    | 0.156                 | 46.2 Fixed-effect |
| North India            | 4    | 689/667            | 2.99 (1.88–4.78)    | 0.101                 | 51.8 Random-effect |
| South India            | 10   | 1,685/2,056        | 1.25 (0.90–1.75)    | <0.001                | 75.0 Random-effect |
| Source of control      |      |                    |                     |                       |                |
| HB                     | 53   | 12,703/14,711      | 1.17 (1.06–1.29)    | <0.001                | 63.1 Random-effect |
| PB                     | 23   | 9,110/9,751        | 1.11 (0.99–1.24)    | 0.008                 | 46.3 Random-effect |
| Matching               |      |                    |                     |                       |                |
| Yes                    | 47   | 11,595/15,282      | 1.12 (1.02–1.24)    | <0.001                | 56.3 Random-effect |
| No                     | 56   | 17,881/20,023      | 1.19 (1.08–1.30)    | <0.001                | 61.9 Random-effect |
| Quality score          |      |                    |                     |                       |                |
| > 12                   | 42   | 16,562/19,771      | 1.11 (1.02–1.21)    | <0.001                | 54.8 Random-effect |
| \(\leq 12\)           | 61   | 12,914/15,534      | 1.20 (1.08–1.33)    | <0.001                | 62.0 Random-effect |
| Sample size            |      |                    |                     |                       |                |
| > 200                  | 88   | 28,568/34,347      | 1.15 (1.08–1.23)    | <0.001                | 60.7 Random-effect |
| \(\leq 200\)          | 15   | 908/958            | 1.20 (0.89–1.63)    | 0.013                 | 50.6 Random-effect |
| Histological type      |      |                    |                     |                       |                |
| SCLC                   | 21   | 975/5,719          | 0.96 (0.80–1.14)    | 0.103                 | 29.2 Fixed-effect |
| LCLC                   | 3    | 51/1,181           | 0.39 (0.17–0.94)    | 0.208                 | 36.3 Fixed-effect |
| SC                     | 37   | 3,832/11,426       | 1.13 (0.98–1.31)    | <0.001                | 54.4 Random-effect |
| SC/Asian               | 11   | 790/1,969          | 1.38 (1.02–1.87)    | 0.002                 | 63.5 Random-effect |
| SC/Caucasian           | 18   | 2,170/6,664        | 1.02 (0.85–1.23)    | 0.024                 | 44.0 Random-effect |
| SC/Indian              | 5    | 511/1,067          | 1.13 (0.72–1.78)    | 0.064                 | 54.1 Random-effect |
| AC                     | 37   | 4,020/11,663       | 1.18 (0.99–1.39)    | <0.001                | 68.6 Random-effect |
| AC/Asian               | 12   | 1,123/2,168        | 1.36 (1.17–1.58)    | 0.150                 | 30.2 Fixed-effect |
| AC/Caucasian           | 17   | 1,889/6,576        | 0.96 (0.70–1.31)    | <0.001                | 77.1 Random-effect |
| AC/Indian              | 5    | 373/1,202          | 2.02 (1.51–2.70)    | 0.865                 | 0.0 Fixed-effect |
| Smoking                |      |                    |                     |                       |                |
| Yes                    | 43   | 8,464/8,513        | 1.23 (1.08–1.40)    | <0.001                | 56.1 Random-effect |
| No                     | 38   | 2,799/6,570        | 1.09 (0.94–1.25)    | 0.055                 | 28.4 Random-effect |
| Gender | N | Cases | Adjusted OR (95% CI) | p-value | HR | Method |
|--------|---|-------|---------------------|---------|----|---------|
| Male   | 21| 7,234/6,243 | 1.10 (0.93–1.29)   | <0.001  | 67.2 | Random-effect |
| Female | 18| 2,919/4,553 | 1.04 (0.93–1.16)   | 0.458   | 0.0 | Fixed-effect |

HB = hospital-based studies, PB = population-based studies, SCLC = small-cell lung cancer, LCLC = large cell lung carcinoma, SC = squamous carcinoma, AC = adenocarcinoma
### Supp Table 15 Meta-analysis of the association of *GSTP1* polymorphism with risk of lung cancer

| Variable                        | n (Cases/Controls) | Val/Val vs. Ile/Ile | Ile/Val vs. Ile/Ile | Val/Val vs. Ile/Ile + Ile/Val | Val/Val |
|--------------------------------|--------------------|---------------------|---------------------|-------------------------------|---------|
|                                |                    | OR (95% CI)         | OR (95% CI)         | OR (95% CI)                   | OR (95% CI) |
| Overall                        | 69 (18,852/21,941) | 1.06 (0.98–1.14)    | 0.116/18.3          | 1.05 (0.99–1.11)              | 0.037/26.1 |
|                                |                    | 1.05 (0.98–1.13)    | 0.208/12.6          |                               | 1.06 (1)  |
| Ethnicity                      |                    |                     |                     |                               |          |
| African                        | 3 (232/268)        | 1.22 (0.71–2.10)    | 0.763/0.0           | 1.42 (0.93–2.17)              | 0.210/35.9 |
| Asian                          | 23 (4,359/5,032)   | **1.45 (1.16–1.80)**| 0.361/7.6          | **1.13 (1.02–1.24)**          | 0.305/12.0 |
| Caucasian                      | 32 (12,148/13,968) | 1.00 (0.91–1.09)    | 0.151/21.8          | 0.99 (0.94–1.05)              | 0.161/21.0 |
| Indian                         | 5 (913/1,175)      | 1.17 (0.76–1.80)    | 0.197/33.6          | 1.05 (0.78–1.42)              | 0.060/55.7 |
|                                |                    |                     |                     |                               | 1.14 (0.74–1.75) |
|                                |                    |                     |                     |                               | 0.309/16.5 |
|                                |                    |                     |                     |                               | 1.14 (1)  |
| Source of control              |                    |                     |                     |                               |          |
| HB                             | 41 (11,475/11,549) | **1.11 (1.01–1.25)**| 0.279/11.5          | 1.07 (0.99–1.16)              | 0.020/36.2 |
| PB                             | 16 (5,459/7,173)   | 0.93 (0.83–1.06)    | 0.278/15.7          | 1.00 (0.92–1.08)              | 0.368/7.6  |
|                                |                    |                     |                     | 0.93 (0.83–1.04)              | 0.317/12.2 |
|                                |                    |                     |                     |                               | 0.98 (0)  |
| Matching                       |                    |                     |                     |                               |          |
| Yes                            | 36 (9,330/11,950)  | 1.06 (0.93–1.21)    | 0.202/17.1          | 1.04 (0.97–1.12)              | 0.156/20.6 |
| No                             | 33 (9,522/9,991)   | 1.09 (0.98–1.22)    | 0.157/21.0          | 1.06 (0.98–1.16)              | 0.043/33.3 |
|                                |                    |                     |                     |                               | 0.174/19.7 |
| Quality score                  |                    |                     |                     |                               | 1.07 (0)  |
| > 12                           | 37 (13,546/15,202) | 1.00 (0.92–1.09)    | 0.215/16.4          | 0.98 (0.93–1.04)              | 0.263/13.1 |
| ≤ 12                           | 32 (5,306/6,739)   | **1.23 (1.06–1.42)**| 0.314/9.8           | **1.13 (1.05–1.23)**          | 0.113/24.6 |
| Sample size                    |                    |                     |                     |                               | 1.16 (1.01–1.34) |
| > 200                          | 65 (18,601/21,594) | 1.09 (0.99–1.20)    | 0.088/21.0          | 1.06 (0.99–1.12)              | 0.021/29.9 |
| ≤ 200                          | 4 (251/347)        | 0.88 (0.40–1.94)    | 0.492/0.0           | 1.07 (0.74–1.55)              | 0.721/0.0  |
|                                |                    |                     |                     | 0.93 (0.44–1.96)              | 0.370/4.6  |
| HWE                            |                    |                     |                     |                               | 1.03 (0)  |
| Yes                            | 63 (17,634/20,618) | **1.08 (1.00–1.17)**| 0.137/17.6          | 1.03 (0.98–1.08)              | 0.146/17.0 |
| No                             | 6 (1,218/1,323)    | **0.73 (0.54–0.99)**| 0.865/0.0           | 1.11 (0.80–1.53)              | 0.007/68.6 |
| Histological type              |                    |                     |                     |                               | **0.71 (0.53–0.95)** |
| SCLC                           | 17 (1,113/6,012)   | **1.34 (1.01–1.77)**| 0.661/0.0           | 1.07 (0.82–1.38)              | 0.060/45.0 |
| SCLC/Caucasian                 | 11 (756/4,423)     | **1.42 (1.05–1.92)**| 0.718/0.0           | 1.00 (0.82–1.23)              | 0.123/40.2 |
| LCLC                           | 4 (193/2,544)      | 0.74 (0.41–1.32)    | 0.204/37.0          | 0.92 (0.66–1.27)              | 0.393/0.0  |
| SC                             | 27 (3,309/9,035)   | 1.10 (0.86–1.40)    | 0.060/37.6          | 0.98 (0.88–1.09)              | 0.624/0.0  |
| SC/Asian                       | 9 (692/1,921)      | 1.02 (0.58–1.78)    | 0.127/47.3          | 0.96 (0.75–1.24)              | 0.899/0.0  |
| SC/Caucasian                   | 15 (2,333/6,206)   | 1.13 (0.85–1.50)    | 0.037/48.2          | 1.00 (0.89–1.12)              | 0.323/12.7 |
| AC                             | 30 (3,745/9,598)   | 1.07 (0.91–1.25)    | 0.472/0.0           | 0.95 (0.86–1.04)              | 0.641/0.0  |
| Smoking                        |                    |                     |                     |                               | 1.03 (0.88–1.22) |
| Yes                            | 23 (5,858/5,287)   | **1.33 (1.08–1.64)**| 0.688/0.0           | 1.03 (0.91–1.17)              | 0.330/13.2 |
| No                             | 23 (1,543/3,027)   | 1.06 (0.72–1.56)    | 0.676/0.0           | 1.12 (0.91–1.39)              | 0.673/0.0  |
| Gender                         |                    |                     |                     |                               | 1.04 (0.72–1.50) |
| Male                           | 17 (4,863/5,175)   | 1.09 (0.94–1.27)    | 0.203/23.2          | 1.01 (0.92–1.10)              | 0.300/14.0 |
| Female                         | 13 (2,812/3,101)   | 1.01 (0.76–1.34)    | 0.049/47.0          | 0.92 (0.82–1.04)              | 0.499/0.0  |

HB = hospital-based studies, PB = population-based studies, SCLC = small-cell lung cancer, LCLC = large cell lung carcinoma, SC = squamous carcinoma, AC = adenocarcinoma
### Supplemental Table 16 Meta-analysis of the combined effects of *GSTM1* present/null and *GSTT1* present/null on lung cancer risk

| Variable | N (Case/Control) | OR (95% CI) | Model 1 | OR (95% CI) | Model 2 | OR (95% CI) | Model 3 | OR (95% CI) | Model 4 | OR (95% CI) | N | P^h | I^2 |
|----------|------------------|-------------|---------|-------------|---------|-------------|---------|-------------|---------|-------------|---|-----|-----|
| Overall  | 20 (15,560/19,914) | 1.34 (1.11–1.61) | 1.27 <0.001/2.7 | 1.53 <0.001/2.7 | 1.20 <0.001/2.7 | 1 | 51.5 |
| Ethnicity | | | | | | | | | | |
| Caucasian | 20 (8,618/10,118) | 1.36 <0.001/2.7 | 1.12 0.005/2.7 | 1.14 0.220/2.7 | 1.12 0.020/2.7 | 1 | 46.9 |
| Asian | 15 (5,813/4,339) | 1.40 (1.06–1.84) | 1.52 (1.17–1.98) | 1.99 <0.001/2.7 | 1.40 0.008/2.7 | 1 | 3.341/4.069 |
| Indian | 3 (632/632) | 1.52 (0.93–2.48) | 1.53 (1.13–2.07) | 2.53 0.473/2.7 | 1.49 0.674/2.7 | 1 |
| African | 3 (219/278) | — | — | 0.56 (0.20–1.62) | 0.38 0.636/2.7 | 0 |
| Source of control | | | | | | | | | | |
| HB | 31 (5,581/6,341) | 1.30 (1.01–1.68) | 1.36 (1.12–1.66) | 1.57 (1.27–1.94) | 1.24 (1.06–1.45) | 1 |
| PB | 12 (7,852/6,542) | 1.73 (1.13–2.65) | 1.21 (0.87–1.70) | 1.54 <0.001/76.1 | 1.17 0.009/59.0 | 1 |
| Matching | | | | | | | | | | |
| Yes | 17 (3,341/4,069) | 1.34 (0.78–2.31) | 1.54 <0.001/82. | 1.43 0.023/51.7 | 1.30 <0.001/68. | 1 |
| No | 28 (12,319/11,845) | 1.34 (0.87–2.31) | 1.21 (0.96–2.46) | 1.57 <0.001/66.0 | 1.16 0.028/38.9 | 1 |
| Quality score | | | | | | | | | | |
| > 12 | 20 (10,000/9,217) | 1.26 (0.99–1.61) | 1.24 <0.001/78. | 1.50 <0.001/71.8 | 1.19 <0.001/69. | 1 |
| ≤ 12 | 25 (5,660/6,697) | 1.39 (1.06–1.64) | 1.28 (1.01–1.55) | 1.56 <0.001/66.0 | 1.17 0.333/10.0 | 1 |
| Sample size | | | | | | | | | | |
| > 200 | 36 (5,173/5,284) | 1.37 (1.11–1.69) | 1.25 (1.08–1.46) | 1.53 (1.29–1.83) | 1.19 (1.07–1.33) | 1 |
| ≤ 200 | 9 (487/630) | 1.19 (0.77–1.84) | 0.646/0.0 | 1.49 (0.72/0.64) | 0.873/0.0 | 1 |

Model 1 = M1 present/T1 null vs. M1 present/T1 present, Model 2 = M1 null/T1 present vs. M1 present/T1 present, Model 3 = M1 null/T1 null vs. M1 present/T1 present, Model 4 = All one risk genotypes vs. M1 present/T1 present, Model 5 = All risk genotypes vs. M1 present/T1 present, Model 6 = M1 null/T1 null vs. M1 present/T1 present + M1 present/T1 null + M1 null/T1 present, HB = hospital-based studies, PB = population-based studies
## Supplemental Table 17 Meta-analysis of the combined effects of GSTM1 null/Null and GSTP1 Ile105Val on lung cancer risk

| Variable | Sample size | Model 1 | Model 2 | Model 3 | Model 4 | Mos |
|----------|-------------|---------|---------|---------|---------|-----|
|          |             | OR (95% CI) | OR (95% CI) | OR (95% CI) | OR (95% CI) | OR |
| Overall  | 21          | 1.15 (0.90–1.48) | 1.04 (0.89–1.22) | 1.02 (0.96–1.08) | 1.01 (0.95–1.07) | 1.11 (0.96–1.28) |
|          | (4,538/5,604) | 1.02 (0.96–1.09) | 0.98 (0.92–1.10) | 0.98 (0.92–1.06) | 0.97 (0.91–1.04) | 1.01 (0.92–1.11) |
| Ethnicity|             |         |         |         |         |     |
| Caucasian| 13          | 1.06 (0.90–1.24) | 1.04 (0.84–1.15) | 1.04 (0.93–1.17) | 1.06 (0.99–1.14) | 1.17 (0.99–1.37) |
|          | (3,384/4,246) | 1.02 (0.84–1.23) | 0.98 (0.84–1.15) | 0.98 (0.89–1.10) | 1.01 (0.94–1.09) | 0.92 (0.75–1.12) |
| Asian    | 2 (209/316) | 1.68 (0.72–2.06) | 0.937 (0.54–2.61) | 1.29 (0.66–2.05) | 1.56 (0.597–0.0) | 1.74 (0.695–0.0) |
|          |             | (1.08–2.63) | (0.72–2.31) | (0.66–2.05) | (1.03–2.35) | (1.50–4.33) |
| Indian   | 3 (632/632) | 1.44 (1.00–2.00) | 1.08 (1.00–2.00) | 0.008 (0.00–2.00) | 1.17 (0.005–1.00) | 1.21 (0.212–3.56) |
|          |             | (1.09–1.90) | (0.72–2.31) | (0.000–0.0) | (1.03–2.35) | (1.50–4.33) |
| African  | 2 (113/146) | – – – – | – – – – | – – – – | – – – – | – – – – |
|          |             |         |         |         |         |     |
| Source of control | |       |       |       |       |     |
| HB       | 12          | 1.14 (0.92–1.42) | 0.98 (0.79–1.22) | 1.06 (0.88–1.29) | 1.17 (0.94–1.46) | 1.17 (0.94–1.46) |
|          | (3,323/3,720) | 1.02 (0.79–1.22) | 0.98 (0.80–1.18) | 1.06 (0.88–1.29) | 1.17 (0.94–1.46) | 1.17 (0.94–1.46) |
| PB       | 5 (528/745) | 1.78 (0.79–4.03) | 1.79 (0.82–3.92) | 1.43 (0.73–2.79) | 1.64 (0.82–3.29) | 1.60 (0.80–3.29) |
|          |             | (0.74–4.03) | (0.82–4.03) | (0.73–2.79) | (1.05–1.94) | (1.04–2.05) |
| Matching |             |         |         |         |         |     |
| Yes      | 13          | 1.34 (1.12–1.61) | 1.18 (0.96–1.45) | 1.21 (0.99–1.49) | 1.15 (0.97–1.37) | 1.11 (0.98–1.27) |
|          | (2,456/3,029) | 1.03 (0.80–1.35) | 0.88 (0.66–1.14) | 0.93 (0.71–1.21) | 1.05 (0.83–1.31) | 0.92 (0.70–1.21) |
| No       | 8 (2,082/2,575) | 0.99 (0.80–1.00) | 1.00 (0.83–1.18) | 0.88 (0.70–1.10) | 0.96 (0.80–1.15) | 0.92 (0.78–1.08) |
|          |             | (0.83–1.18) | (0.74–1.05) | (0.80–1.07) | (0.89–1.24) | (0.89–1.24) |
| Quality score | |       |       |       |       |     |
| > 12     | 12          | 1.32 (1.01–1.71) | 1.03 (0.86–1.23) | 1.26 (1.05–1.52) | 1.31 (1.02–1.68) | 1.21 (1.01–1.47) |
|          | (3,053/3,606) | 1.00 (0.87–1.22) | 1.00 (0.87–1.22) | 1.26 (1.05–1.52) | 1.31 (1.02–1.68) | 1.21 (1.01–1.47) |
| ≤ 12     | 9 (1,485/1,998) | 0.96 (0.84–1.27) | 0.96 (0.73–1.27) | 0.96 (0.81–1.13) | 1.30 (0.98–1.61) | 1.00 (0.75–1.36) |
|          |             | (0.68–0.00) | (0.73–1.27) | (0.81–1.13) | (1.07–1.58) | (0.80–1.24) |
| HWE      |             |       |       |       |       |     |
| Yes      | 19          | 1.08 (0.94–1.24) | 1.00 (0.87–1.15) | 1.08 (0.97–1.20) | 1.34 (1.10–1.62) | 1.15 (0.93–1.40) |
|          | (4,117/5,183) | 1.00 (0.87–1.15) | 1.00 (0.87–1.15) | 1.08 (0.97–1.20) | 1.34 (1.10–1.62) | 1.15 (0.93–1.40) |
| No       | 2 (421/421) | 1.48 (0.84–2.61) | 1.00 (0.84–2.61) | 1.13 (0.84–2.61) | 1.09 (0.84–2.61) | 1.15 (0.84–2.61) |
|          |             | (0.84–2.61) | (0.84–2.61) | (0.84–2.61) | (0.84–2.61) | (0.84–2.61) |

Model 1 = MI null/PI Ile/Ile vs. MI present/PI Ile/Ile, Model 2 = MI present/PI Val* vs. MI present/PI Ile/Ile, Model 3 = (MI null/PI Ile/Ile + MI present/PI Val*) vs. MI present/PI Ile/Ile; Model 4 = MI null/PI Val* vs. MI present/ PI Ile/Ile, Model 5 = All risk genotypes vs. MI present/PI Ile/Ile, Model 6 = MI null/PI Val* vs. (MI present/PI Ile/Ile + MI null/PI Ile/Ile + MI Present/PI Val*), HB = hospital-based studies, PB = population-based studies.
### Supplemental Table 18 Meta-analysis of the combined effects of GSTT1 present/null and GSTP1 Ile105Val on lung cancer risk

| Variable | Sample size | Model 1 | Model 2 | Model 3 | Model 4 | δ |
|----------|-------------|---------|---------|---------|---------|---|
|          |             | OR (95% CI) | P/δ² | OR (95% CI) | P/δ² | OR (95% CI) | P/δ² | OR (95% CI) | P/δ² | C |
| Overall  | 17          | 1.32    | 0.600/0.0 | 0.96 | 0.149/31.3 | 1.03 | 0.162/25.4 | 1.55 | 0.005/53.7 | 1 |
|          | (3,507/4,151) | (1.10–1.58) | (0.85–1.08) | (0.93–1.14) | (1.18–2.02) | (1.03–1.95) | (0.86–1.09) | (1.03–1.95) | 1 |
| Ethnicity |             |         |         |         |         |         |         |         |         | |
| Caucasian| 9 (2,356/2,794) | 1.16   | 0.632/0.0 | 0.93 | 0.228/29.1 | 0.97 | 0.321/13.6 | 1.42 | 0.042/50.2 | 1 |
|          | (0.90–1.49) | (0.80–1.05) | (0.86–1.09) | (1.03–1.95) | (0.86–1.09) | (1.03–1.95) | (0.86–1.09) | (1.03–1.95) | 1 |
| Asian    | 2 (209/316)  | 1.33   | 0.823/0.0 | 1.04 | 0.036/77.3 | 1.27 | 0.473/0.0  | 2.29 | 0.327/0.0 | 1 |
|          | (0.86–2.05) | (0.31–3.58) | (0.85–1.89) | (1.33–3.93) | (0.85–1.89) | (1.33–3.93) | (0.85–1.89) | (1.33–3.93) | 1 |
| Indian   | 3 (632/632)  | 1.75   | 0.284/20.5 | 1.01 | 0.154/46.5 | 1.18 | 0.101/56.4 | 2.06 | 0.016/75.8 | 1 |
|          | (1.21–2.55) | (0.77–1.34) | (0.93–1.51) | (0.75–5.64) | (0.93–1.51) | (0.75–5.64) | (0.93–1.51) | (0.75–5.64) | 1 |
| African  | 2 (110/145)  | –      | –       | –       | 1.20 | 0.109/61.1 | 1.28 | 0.303/5.9 | 1 |
|          |             |         |         |         | (0.36–3.99) | (0.53–3.06) | (0.53–3.06) | (0.53–3.06) | 1 |
| Source of control |             |         |         |         |         |         |         |         |         | |
| HB       | 9 (2,278/2,476) | 1.32   | 0.319/14.5 | 0.96 | 0.172/33.5 | 1.01 | 0.236/23.3 | 1.54 | 0.002/67.9 | 1 |
|          | (1.06–1.64) | (0.82–1.12) | (0.89–1.15) | (1.01–1.37) | (0.89–1.15) | (1.01–1.37) | (0.89–1.15) | (1.01–1.37) | 1 |
| PB       | 5 (675/833)  | 1.25   | –       | 0.78 | –       | 1.02 | 0.162/38.9 | 1.70 | 0.244/26.7 | 1 |
|          | (0.48–3.29) | (0.54–1.12) | (0.81–1.28) | (1.16–2.49) | (0.81–1.28) | (1.16–2.49) | (0.81–1.28) | (1.16–2.49) | 1 |
| Matching |             |         |         |         |         |         |         |         |         | |
| Yes      | 10          | 1.22   | 0.676/0.0 | 1.12 | 0.074/53.2 | 1.10 | 0.294/16.2 | 1.41 | 0.088/40.5 | 1 |
|          | (2,084/2,407) | (0.97–1.54) | (0.81–1.36) | (0.96–3.27) | (0.96–3.27) | (1.02–1.95) | (0.96–3.27) | (1.02–1.95) | 1 |
| No       | 7 (1,423/1,744) | 1.50   | 0.426/0.0 | 0.90 | 0.434/0.0 | 0.95 | 0.195/30.5 | 1.71 | 0.012/63.4 | 1 |
|          | (1.11–2.01) | (0.76–1.06) | (0.82–1.10) | (1.09–2.67) | (0.82–1.10) | (1.09–2.67) | (0.82–1.10) | (1.09–2.67) | 1 |
| Quality score |             |         |         |         |         |         |         |         |         | |
| > 12     | 11          | 1.21   | 0.677/0.0 | 0.94 | 0.133/43.2 | 1.01 | 0.186/27.1 | 1.52 | 0.029/50.1 | 1 |
|          | (2,439/2,784) | (0.95–1.55) | (0.80–1.11) | (0.90–1.14) | (0.90–1.14) | (1.09–2.12) | (0.90–1.14) | (1.09–2.12) | 1 |
| ≤12      | 6 (1,068/1,367) | 1.47   | 0.413/0.5 | 0.98 | 0.191/32.7 | 1.06 | 0.186/33.4 | 1.59 | 0.020/62.6 | 1 |
|          | (1.11–1.94) | (0.81–1.18) | (0.89–1.26) | (0.98–2.56) | (0.89–1.26) | (0.98–2.56) | (0.89–1.26) | (0.98–2.56) | 1 |
| HWE      |             |         |         |         |         |         |         |         |         | |
| Yes      | 15          | 1.29   | 0.473/0.0 | 0.96 | 0.162/32.0 | 1.03 | 0.175/25.3 | 1.58 | 0.004/56.5 | 1 |
|          | (3,086/3,730) | (1.06–1.58) | (0.85–1.10) | (0.93–1.14) | (0.93–1.14) | (1.18–2.10) | (0.93–1.14) | (1.18–2.10) | 1 |
| No       | 2 (421/421)  | 1.45   | 0.474/0.0 | 0.90 | 0.102/62.6 | 1.01 | 0.102/62.6 | 1.35 | 0.134/55.5 | 1 |
|          | (0.91–2.29) | (0.63–1.28) | (0.61–1.67) | (0.50–3.65) | (0.61–1.67) | (0.50–3.65) | (0.61–1.67) | (0.50–3.65) | 1 |

Model 1 = TT null/P1 Ile/Ile vs. T1 present/P1 Ile/Ile, Model 2 = T1 present/P1 Ile/Ile vs. T1 present/P1 Ile/Ile, Model 3 = (TT null/P1 Ile/Ile + T1 present/P1 Ile/Ile) vs. T1 present/P1 Ile/Ile, Model 4 = T1 null/P1 Val* vs. T1 present/P1 Ile/Ile, Model 5 = All risk genotypes vs. T1 present/P1 Ile/Ile, Model 6 = T1 null/P1 Val* vs. (T1 present/P1 Ile/Ile + T1 null/P1 Ile/Ile + T1 Present/P1 Val*), HB = hospital-based studies, PB = population-based studies
### Supplemental Table 19

Meta-analysis of the combined effects of *GSTM1* present/null, *GSTT1* present/null and *GSTP1* present/null on lung cancer risk

| Variable | Sample | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 |
|----------|--------|---------|---------|---------|---------|---------|---------|---------|
|          | size   | OR (95% CI) | OR (95% CI) | OR (95% CI) | OR (95% CI) | OR (95% CI) | OR (95% CI) | OR (95% CI) |
| Overall  | 7      | 1.08 (0.61–1.90) | 1.44 (0.66–3.13) | 1.01 (0.55–1.86) | 1.16 (0.95–1.41) | 0.9320 (0.65–1.34) | 1.65 (0.65–4.18) | 1.65 (0.65–4.18) | 2.81 (1.82–7.79) |
| HWE      | Yes    | – | – | – | – | – | – | – |
|          | (436/672) | (0.66–3.13) | (0.55–1.86) | (0.95–1.41) | (0.65–4.18) | (0.65–4.18) | – | – |
|          | 6      | – | – | – | – | – | – | – |
|          | (345/541) | – | – | – | – | – | – | – |

Model 1 = M1 null/T1 present/P1 Ile/Ile vs. M1 present/T1 present/P1 Ile/Ile, Model 2 = M1 present/T1 null/P1 Ile/Ile vs. M1 present/T1 present/P1 Ile/Ile, Model 3 = M1 present/T1 present/P1 Val 1 vs. M1 present/T1 present/P1 Ile/Ile, Model 4 = all one high-risk genotype vs. M1 present/T1 present/P1 Ile/Ile, Model 5 = M1 null/T1 null/P1 Ile/Ile vs. M1 present/T1 present/P1 Ile/Ile, Model 6 = M1 null/T1 present/P1 Val 1 vs. M1 present/T1 present/P1 Ile/Ile, Model 7 = M1 present/T1 null/P1 Val 1 vs. M1 present/T1 present/P1 Ile/Ile, Model 8 = all two high-risk genotype vs. M1 present/T1 present/P1 Ile/Ile, Model 9 = M1 null/T1 null/P1 Val 1 vs. M1 present/T1 present/P1 Ile/Ile, Model 10 = M1 null/T1 null/P1 Val 1 vs. M1 present/T1 present/P1 Ile/Ile + all one high-risk genotype + all two high-risk genotypes.