

**Supplementary Figure S1.** The genotyping diagrams of rs10754339 (A, B) and rs12976445 (C, D) by Sanger sequencing and PCR-RFLP assay.



**Supplementary Figure S2.** The flow diagram of the literature review process for the meta-analysis of rs10754339 and cancer risk (A) and the meta-analysis of rs12976445 and cancer risk (B).



**Supplementary Figure S3.** Forest plots for the meta-analysis of 10754339 and overall cancer risk under A *vs.* G in the total population (A) and the Chinese population (B). Forest plots for the meta-analysis of rs10754339 and breast cancer risk (C).

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A 	OR (95% CI)	Weight%
Mohan et al., 2018 (Prostate cancer)	0.63 (0.42, 0.93)	9.01
Hossein et al., 2018 (Colorectal cancer)	1.03 (0.84, 1.27)	15.27
Tomasz et al., 2020 (Breast Cancer)	1.09 (0.77, 1.53)	10.46
Morteza et al., 2020 (Prostate cancer)		11.19
Jiasheng et al., 2021 (Lung cancer)	1.05 (0.79, 1.38)	12.63
This study, 2022 (Liver cancer)	1.37 (1.08, 1.76)	13.81
This study, 2022 (Lung cancer)	1.48 (1.17, 1.87)	14.27
This study, 2022 (Gastric cancer)	1.17 (0.90, 1.51)	13.37
Overall (I-squared = 62.7%, P = 0.009)	> 1.09 (0.93, 1.28)	100.00
NOTE: Weights are from random effects analysis		
0.421	2.37	
B Study	OR (95% Cl)	Weight%
Mohan et al., 2018 (Prostate cancer)	0.63 (0.42, 0.93)	10.42
Hossein et al., 2018 (Colorectal cancer)	1.03 (0.84, 1.27)	16.74
Morteza et al., 2020 (Prostate cancer)		12.69
Jiasheng et al., 2021 (Lung cancer)	1.05 (0.79, 1.38)	14.15
This study, 2022 (Liver cancer)	1.37 (1.08, 1.76)	15.33
This study, 2022 (Lung cancer)		15.77
This study, 2022 (Gastric cancer)	1.17 (0.90, 1.51)	14.89
Overall (I-squared = 68.0%, P = 0.005)	1.09 (0.91, 1.30)	100.00
NOTE: Weights are from random effects analysis		
0.421 1	2.37	
C Study	OR (95% CI)	Weight%
Mohan et al., 2018 (Prostate cancer)	0.63 (0.42, 0.93)	13.49
Tomasz et al., 2020 (Breast Cancer)		15.13
Morteza et al., 2020 (Prostate cancer)	- 0.92 (0.67, 1.27)	15.90
This study, 2022 (Liver cancer)	1.37 (1.08, 1.76)	18.49
This study, 2022 (Lung cancer) —	1.48 (1.17, 1.87)	18.91
This study, 2022 (Gastric cancer)	1.17 (0.90, 1.51)	18.08
Overall (I-squared = 71.2%, P = 0.004)	> 1.10 (0.88, 1.38)	100.0
NOTE: Weights are from random effects analysis		
0.421 1	2.37	



**Supplementary Figure S4.** Forest plots for the meta-analysis of rs12976445 and overall cancer risk under T *vs.* C in the total population (A), in the Asian population (B), based on PCR-RFLP (C), and in the Chinese population (D).



**Supplementary Figure S5.** *In silico* expression analysis of *B7-H4* mRNA expression in relation to different genotypes of rs10754339 (A) and *miR-125a* mRNA expression in relation to different genotypes of rs12976445 (B).

Supplementary Table S1.	Characteristics of the included studies for the meta-analysis of
	rs10754339 and rs12976445

References (author, year)	Country/ethnicity	Cancer type	Genotyping assay <sup>1</sup>	Case, control (n)			HWE <sup>2</sup>	Quality control <sup>3</sup> (Y/N)
rs10754339				Total	A/G	AA/AG/GG		
Asuman et al., 2013	USA/Caucasian	Breast cancer	PCR-RFLP	31, 30	54/8, 55/5	24/6/1, 26/3/1	0.167	Y
Asuman et al., 2017	Turkey/Caucasian	Bladder cancer	PCR-RFLP	62, 30	117/7, 47/13	55/7/0, 18/11/1	0.660	Y
Jin et al., 2022	China/Asian	Liver cancer	PCR-RFLP	480, 800	858/102, 1,443/157	384/90/6, 650/143/7	0.779	Y
Jin et al., 2022	China/Asian	Lung cancer	PCR-RFLP	550, 800	949/151, 1,443/157	409/131/10, 650/143/7	0.779	Y
Jin et al., 2022	China/Asian	Gastric cancer	PCR-RFLP	460, 800	797/123, 1,443/157	344/109/7, 650/143/7	0.779	Y
Li et al., 2009	China/Asian	Breast cancer	PCR-RFLP	287, 305	434/140, 493/117	159/116/12, 198/97/10	0.652	Y
Tsai et al., 2015	China/Asian	Breast cancer	PCR-RFLP	566/400	978/154, 720/80	420/138/8, 324/72/4	1.000	Y
Zhang et al., 2009	China/Asian	Breast cancer	PCR-RFLP	500, 504	753/247, 808/200	277/199/24, 324/160/20	0.965	Y
rs12976445				Total	T/C	TT/CT/CC		
Hossein et al., 2018	Iranian/Asian	Colorectal cancer	TP-ARMS-PCR	373, 372	438/308, 431/313	118/202/53, 116/199/57	0.060	Y
Jin et al., 2022	China/Asian	Liver cancer	PCR-RFLP	480, 800	131/829, 165/1,435	10/111/359, 7/151/642	0.779	Y
Jin et al., 2022	China/Asian	Lung cancer	PCR-RFLP	550, 800	160/940, 165/1,435	15/130/405, 7/151/642	0.779	Y
Jin et al., 2022	China/Asian	Gastric cancer	PCR-RFLP	460, 800	109/811, 165/1,435	7/95/358, 7/151/642	0.779	Y
Mohan et al., 2018	Indian/Asian	Prostate cancer	PCR-RFLP	100, 100	99/101, 122/78	28/43/29, 37/48/15	0.930	Y
Morteza et al., 2020	Iranian/Asian	Prostate cancer	PCR-RFLP	150, 150	137/163, 143/157	28/81/41, 33/77/40	0.723	Y
Sun et al., 2021	China/Asian	Lung cancer	Taqman	503, 548	109/897, 114/982	8/93/402, 2/110/436	0.198	Y
Tomasz et al., 2020	Polish/Caucasian	Breast cancer	PCR-RFLP	175, 129	241/109, 173/85	80/81/14, 54/65/10	0.111	Y

**Note.** <sup>1</sup>PCR-RFLP, polymerase chain reaction-restriction fragment length polymorphism; TP-ARMS-PCR, tetra-primer amplification refractory mutation systems polymerase chain reaction; <sup>2</sup>Genotypic frequencies of rs10754339 and rs12974339 in normal controls was tested for departure from Hardy-Weinberg equilibrium (HWE) using the  $\chi^2$  test. <sup>3</sup>Quality control was conducted when sample of cases and controls was genotyped.