
SUPPLEMENTARY MATERIAL

Article

HLA-G Gene Variability Is Associated with Papillary Thyroid Carcinoma Morbidity and the HLA-G Protein Profile

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Table S1. HLA-G 5'UTR, coding and 3'UTR haplotypes in papillary thyroid carcinoma (PTC) patients and control subjects.

| HLA-G haplotypes | | Total | | Controls | | PTC patients | | OR | 95% CI | P |
|------------------|------------------------------------|------------|---------------|-----------|---------------|--------------|---------------|---------------|------------------------|---------------|
| | | n | Freq. | n | Freq. | n | Freq. | | | |
| 5'UTR | 1 G010102a | 201 | 0.3295 | 99 | 0.3214 | 102 | 0.3377 | 1.0767 | 0.7681 - 1.5092 | 0.7305 |
| | 2 G010101a | 129 | 0.2115 | 59 | 0.1916 | 70 | 0.2318 | 1.2734 | 0.8623 - 1.8804 | 0.2352 |
| | 3 G0104a | 78 | 0.1279 | 50 | 0.1623 | 28 | 0.0927 | 0.5273 | 0.3221 - 0.8632 | 0.0109 |
| | 4 G010101b | 41 | 0.0672 | 20 | 0.0649 | 21 | 0.0695 | 1.0762 | 0.5708 - 2.0288 | 0.8723 |
| | 5 G010101f | 40 | 0.0656 | 17 | 0.0552 | 23 | 0.0762 | 1.4111 | 0.7381 - 2.6978 | 0.3288 |
| | 6 G010101c | 33 | 0.0541 | 18 | 0.0584 | 15 | 0.0497 | 0.8420 | 0.4163 - 1.7031 | 0.7214 |
| | 7 G0103a | 26 | 0.0426 | 13 | 0.0422 | 13 | 0.0430 | 1.0208 | 0.4653 - 2.2395 | 1.0000 |
| | 8 G010101d | 16 | 0.0262 | 5 | 0.0162 | 11 | 0.0364 | 2.2907 | 0.7863 - 6.6736 | 0.1348 |
| | 9 G0103d | 16 | 0.0262 | 9 | 0.0292 | 7 | 0.0232 | 0.7883 | 0.2898 - 2.1445 | 0.8012 |
| | 10 G0103e | 15 | 0.0246 | 8 | 0.0260 | 7 | 0.0232 | 0.8898 | 0.3186 - 2.4851 | 1.0000 |
| | 11 G0104b | 3 | 0.0049 | 2 | 0.0065 | 1 | 0.0033 | 0.5083 | 0.0458 - 5.6353 | 1.0000 |
| | 12 G010102d | 3 | 0.0049 | 1 | 0.0032 | 2 | 0.0066 | 2.0467 | 0.1846 - 22.6903 | 0.6207 |
| | 13 G010101h | 2 | 0.0033 | 2 | 0.0065 | 0 | 0.0000 | 0.2026 | 0.0097 - 4.2385 | 0.4992 |
| | 14 G0103c | 2 | 0.0033 | 2 | 0.0065 | 0 | 0.0000 | 0.2026 | 0.0097 - 4.2385 | 0.4992 |
| | 15 G010101g | 1 | 0.0016 | 0 | 0.0000 | 1 | 0.0033 | 3.0697 | 0.1246 - 75.6491 | 0.4951 |
| | 16 G010101j | 1 | 0.0016 | 0 | 0.0000 | 1 | 0.0033 | 3.0697 | 0.1246 - 75.6491 | 0.4951 |
| | 17 G010101i | 1 | 0.0016 | 1 | 0.0032 | 0 | 0.0000 | 0.3388 | 0.0137 - 8.3505 | 1.0000 |
| | 18 G010102e | 1 | 0.0016 | 1 | 0.0032 | 0 | 0.0000 | 0.3388 | 0.0137 - 8.3505 | 1.0000 |
| | 19 G0104c | 1 | 0.0016 | 1 | 0.0032 | 0 | 0.0000 | 0.3388 | 0.0137 - 8.3505 | 1.0000 |
| Total [2n] | | 610 | 1.0000 | 308 | 1.0000 | 302 | 1.0000 | - | - | - |
| Coding | 1 G*01:01:01:01 | 126 | 0.2066 | 56 | 0.1818 | 70 | 0.2318 | 1.3578 | 0.9156 - 2.0135 | 0.1345 |
| | 2 G*01:01:02:01 | 105 | 0.1721 | 46 | 0.1494 | 59 | 0.1954 | 1.3829 | 0.9057 - 2.1114 | 0.1350 |
| | 3 G*01:01:01:05 | 72 | 0.1180 | 38 | 0.1234 | 34 | 0.1126 | 0.9014 | 0.5508 - 1.4752 | 0.7079 |
| | 4 G*01:03:01:02 | 59 | 0.0967 | 32 | 0.1039 | 27 | 0.0894 | 0.8468 | 0.4941 - 1.4513 | 0.5852 |
| | 5 G*01:04:01 | 43 | 0.0705 | 26 | 0.0844 | 17 | 0.0563 | 0.6470 | 0.3435 - 1.2185 | 0.2063 |
| | 6 G*01:01:01:04 | 41 | 0.0672 | 19 | 0.0617 | 22 | 0.0728 | 1.1951 | 0.6330 - 2.2562 | 0.6296 |
| | 7 G*01:04:04 | 38 | 0.0623 | 26 | 0.0844 | 12 | 0.0397 | 0.4488 | 0.2221 - 0.9068 | 0.0285 |
| | 8 G*01:06 | 32 | 0.0525 | 20 | 0.0649 | 12 | 0.0397 | 0.5959 | 0.2860 - 1.2414 | 0.2038 |
| | 9 G*01:05N | 27 | 0.0443 | 13 | 0.0422 | 14 | 0.0464 | 1.1031 | 0.5096 - 2.3876 | 0.8459 |
| | 10 G*01:01:03:03 | 25 | 0.0410 | 13 | 0.0422 | 12 | 0.0397 | 0.9390 | 0.4214 - 2.0922 | 1.0000 |
| | 11 G*01:01:01:08 | 12 | 0.0197 | 4 | 0.0130 | 8 | 0.0265 | 2.0680 | 0.6161 - 6.9413 | 0.2579 |
| | 12 G*01:01:22:01 | 9 | 0.0148 | 4 | 0.0130 | 5 | 0.0166 | 1.2795 | 0.3403 - 4.8110 | 0.7499 |
| | 13 G*01:01:01:15 | 4 | 0.0066 | 1 | 0.0032 | 3 | 0.0099 | 3.0803 | 0.3186 - 29.7784 | 0.3689 |
| | 14 G*01:01:17 | 3 | 0.0049 | 1 | 0.0032 | 2 | 0.0066 | 2.0467 | 0.1846 - 22.6903 | 0.6207 |
| | 15 G*01:01:01:06 | 2 | 0.0033 | 2 | 0.0065 | 0 | 0.0000 | 0.2026 | 0.0097 - 4.2385 | 0.4992 |
| | 16 G*01:01:15compatible | 2 | 0.0033 | 0 | 0.0000 | 2 | 0.0066 | 5.1331 | 0.2454 - 107.3643 | 0.2447 |
| | 17 G*01:01:09(no deletion at +615) | 2 | 0.0033 | 2 | 0.0065 | 0 | 0.0000 | 0.2026 | 0.0097 - 4.2385 | 0.4992 |
| | 18 G*01:01:14 | 2 | 0.0033 | 2 | 0.0065 | 0 | 0.0000 | 0.2026 | 0.0097 - 4.2385 | 0.4992 |
| | 19 G*01:01:01:13 | 2 | 0.0033 | 0 | 0.0000 | 2 | 0.0066 | 5.1331 | 0.2454 - 107.3643 | 0.2447 |
| | 20 G*01:04:05compatible | 1 | 0.0016 | 1 | 0.0032 | 0 | 0.0000 | 0.3388 | 0.0137 - 8.3505 | 1.0000 |
| | 21 G*01:01:30:02 | 1 | 0.0016 | 1 | 0.0032 | 0 | 0.0000 | 0.3388 | 0.0137 - 8.3505 | 1.0000 |
| | 22 G*01:01:02:01(+2798G) | 1 | 0.0016 | 0 | 0.0000 | 1 | 0.0033 | 3.0697 | 0.1246 - 75.6491 | 0.4951 |
| | 23 G*01:01:02:02 | 1 | 0.0016 | 1 | 0.0032 | 0 | 0.0000 | 0.3388 | 0.0137 - 8.3505 | 1.0000 |
| Total [2n] | | 610 | 1.0000 | 308 | 1.0000 | 302 | 1.0000 | - | - | - |
| 3'UTR | 1 UTR-02 | 176 | 0.2885 | 83 | 0.2695 | 93 | 0.3079 | 1.2063 | 0.8494 - 1.7131 | 0.3257 |
| | 2 UTR-01 | 140 | 0.2295 | 60 | 0.1948 | 80 | 0.2649 | 1.4895 | 1.0180 - 2.1793 | 0.0433 |
| | 3 UTR-03 | 81 | 0.1328 | 53 | 0.1721 | 28 | 0.0927 | 0.4917 | 0.3016 - 0.8015 | 0.0041 |
| | 4 UTR-04 | 75 | 0.1230 | 41 | 0.1331 | 34 | 0.1126 | 0.8262 | 0.5086 - 1.3421 | 0.4615 |
| | 5 UTR-05 | 53 | 0.0869 | 26 | 0.0844 | 27 | 0.0894 | 1.0649 | 0.6061 - 1.8710 | 0.8861 |
| | 6 UTR-06 | 26 | 0.0426 | 10 | 0.0325 | 16 | 0.0530 | 1.6671 | 0.7442 - 3.7347 | 0.2337 |
| | 7 UTR-07 | 26 | 0.0426 | 14 | 0.0455 | 12 | 0.0397 | 0.8690 | 0.3952 - 1.9107 | 0.8418 |
| | 8 UTR-18 | 19 | 0.0311 | 9 | 0.0292 | 10 | 0.0331 | 1.1377 | 0.4557 - 2.8403 | 0.8195 |
| | 9 UTR-08 | 4 | 0.0066 | 4 | 0.0130 | 0 | 0.0000 | 0.1118 | 0.0060 - 2.0864 | 0.1238 |
| | 10 UTR-20 | 3 | 0.0049 | 2 | 0.0065 | 1 | 0.0033 | 0.5083 | 0.0458 - 5.6353 | 1.0000 |
| | 11 UTR-09 | 3 | 0.0049 | 3 | 0.0097 | 0 | 0.0000 | 0.1443 | 0.0074 - 2.8050 | 0.2488 |
| | 12 UTR-17 | 2 | 0.0033 | 2 | 0.0065 | 0 | 0.0000 | 0.2026 | 0.0097 - 4.2385 | 0.4992 |
| | 13 UTR-13 | 1 | 0.0016 | 0 | 0.0000 | 1 | 0.0033 | 3.0697 | 0.1246 - 75.6491 | 0.4951 |
| | 14 UTR-44 | 1 | 0.0016 | 1 | 0.0032 | 0 | 0.0000 | 0.3388 | 0.0137 - 8.3505 | 1.0000 |
| Total [2n] | | 610 | 1.0000 | 308 | 1.0000 | 302 | 1.0000 | - | - | - |

5'UTR: 5' upstream region. 3'UTR: 3' untranslated region. OR: Odds Ratio. CI: Confidence Interval. Freq: Frequency. Haplotypes in order of total frequency. Comparisons between PTC patients and controls were made using Fisher's exact test and *P*-values below 0.05 are highlighted in bold.

Table S2. Association between *HLA-G* 5'UTR, coding and 3'UTR haplotypes and histopathological features of PTC (*n* = 185).

| <i>HLA-G</i> haplotypes | | Tumor size | | Histological Subtype ϕ | | Tumor invasion | | Extrathyroidal extension | | Multicentricity | | Metastasis at diagnosis | | TNM Staging 8 th θ | | Hashimoto's thyroiditis | | Response to therapy # | |
|-------------------------|-----------------|-----------------|-----------------|-----------------------------|----------------|-----------------|-----------------|--------------------------|-----------------|-----------------------------|----------------------------|-------------------------|-----------------|--------------------------------------|----------------|-------------------------|-----------------|-----------------------------|-----------------------------|
| | | <2 cm | ≥2 cm | Low risk | High risk | Absent | Present | Absent | Present | Absent | Present | Absent | Present | I | II/III/IV | Absent | Present | Complete | Incomplete |
| | | <i>n</i> = 106 | <i>n</i> = 79 | <i>n</i> = 152 | <i>n</i> = 33 | <i>n</i> = 133 | <i>n</i> = 52 | <i>n</i> = 134 | <i>n</i> = 51 | <i>n</i> = 119 | <i>n</i> = 66 | <i>n</i> = 133 | <i>n</i> = 52 | <i>n</i> = 153 | <i>n</i> = 30 | <i>n</i> = 132 | <i>n</i> = 53 | <i>n</i> = 111 | <i>n</i> = 29 |
| | | (freq.) | (freq.) | (freq.) | (freq.) | (freq.) | (freq.) | (freq.) | (freq.) | (freq.) | (freq.) | (freq.) | (freq.) | (freq.) | (freq.) | (freq.) | (freq.) | (freq.) | (freq.) |
| 5'UTR | 1 G010102a | 74 (0.3491) | 48 (0.3038) | 97 (0.3190) | 25 (0.3787) | 87 (0.3271) | 35 (0.3365) | 92 (0.3433) | 30 (0.2941) | 71 (0.2983) | 51 (0.3864) | 82 (0.3083) | 40 (0.3846) | 99 (0.3235) | 21 (0.3500) | 86 (0.3257) | 36 (0.3396) | 74 (0.3333) | 23 (0.3965) |
| | 2 G010101a | 50 (0.2358) | 33 (0.2089) | 66 (0.2171) | 17 (0.2575) | 58 (0.2180) | 25 (0.2404) | 61 (0.2276) | 22 (0.2157) | 52 (0.2185) | 31 (0.2348) | 61 (0.2293) | 22 (0.2115) | 72 (0.2352) | 11 (0.1833) | 56 (0.2121) | 27 (0.2547) | 52 (0.2342) | 9 (0.1551) |
| | 3 G0104a | 18 (0.0849) | 23 (0.1456) | 35 (0.1151) | 6 (0.0909) | 31 (0.1165) | 10 (0.0962) | 27 (0.1007) | 14 (0.1373) | 34 ^A (0.1429) | 7 ^A (0.0530) | 32 (0.1203) | 9 (0.0865) | 30 (0.0980) | 9 (0.1500) | 32 (0.1212) | 9 (0.0849) | 19 (0.0855) | 7 (0.1206) |
| | 4 G010101f | 15 (0.0708) | 12 (0.0759) | 23 (0.0756) | 4 (0.0606) | 17 (0.0639) | 10 (0.0962) | 19 (0.0709) | 8 (0.0784) | 17 (0.0714) | 10 (0.0758) | 19 (0.0714) | 8 (0.0769) | 21 (0.0686) | 6 (0.1000) | 20 (0.0757) | 7 (0.0660) | 18 (0.0810) | 4 (0.0689) |
| | 5 G010101b | 12 (0.0566) | 10 (0.0633) | 17 (0.0559) | 5 (0.0757) | 16 (0.0602) | 6 (0.0577) | 17 (0.0634) | 5 (0.0490) | 12 (0.0504) | 10 (0.0758) | 19 (0.0714) | 3 (0.0288) | 21 (0.0686) | 1 (0.0166) | 18 (0.0681) | 4 (0.0377) | 16 (0.0720) | 3 (0.0517) |
| | 6 G0103a | 14 (0.0660) | 4 (0.0253) | 15 (0.0493) | 3 (0.0454) | 13 (0.0489) | 5 (0.0481) | 13 (0.0485) | 5 (0.0490) | 13 (0.0546) | 5 (0.0379) | 14 (0.0526) | 4 (0.0385) | 13 (0.0424) | 5 (0.0833) | 9 (0.0340) | 9 (0.0849) | 10 (0.0450) | 3 (0.0517) |
| | 7 G010101c | 8 (0.0377) | 9 (0.0570) | 13 (0.0427) | 4 (0.0606) | 15 (0.0564) | 2 (0.0192) | 15 (0.0560) | 2 (0.0196) | 13 (0.0546) | 4 (0.0303) | 11 (0.0414) | 6 (0.0577) | 15 (0.0490) | 2 (0.0333) | 10 (0.0378) | 7 (0.0660) | 13 (0.0585) | 2 (0.0344) |
| | 8 G010101d | 8 (0.0377) | 5 (0.0316) | 12 (0.0394) | 1 (0.0151) | 8 (0.0301) | 5 (0.0481) | 8 (0.0299) | 5 (0.0490) | 9 (0.0378) | 4 (0.0303) | 8 (0.0301) | 5 (0.0481) | 10 (0.0326) | 3 (0.0500) | 12 (0.0454) | 1 (0.0094) | 8 (0.0360) | 2 (0.0344) |
| | 9 G0103e | 6 (0.0283) | 4 (0.0253) | 10 (0.0328) | 0 (0.0000) | 7 (0.0263) | 3 (0.0288) | 5 (0.0187) | 5 (0.0490) | 9 (0.0378) | 1 (0.0076) | 7 (0.0263) | 3 (0.0288) | 8 (0.0261) | 2 (0.0333) | 9 (0.0340) | 1 (0.0094) | 6 (0.0270) | 0 (0.0000) |
| | 10 G0103d | 3 (0.0142) | 4 (0.0253) | 6 (0.0197) | 1 (0.0151) | 7 (0.0263) | 0 (0.0000) | 6 (0.0224) | 1 (0.0098) | 3 (0.0126) | 4 (0.0303) | 6 (0.0226) | 1 (0.0096) | 7 (0.0228) | 0 (0.0000) | 7 (0.0265) | 0 (0.0000) | 4 (0.0180) | 3 (0.0517) |
| | 11 G0104b | 3 (0.0142) | 2 (0.0127) | 5 (0.0164) | 0 (0.0000) | 3 (0.0113) | 2 (0.0192) | 3 (0.0112) | 2 (0.0196) | 3 (0.0126) | 2 (0.0152) | 3 (0.0113) | 2 (0.0192) | 5 (0.0163) | 0 (0.0000) | 2 (0.0075) | 3 (0.0283) | 0 (0.0000) | 1 (0.0172) |
| | 12 G010102d | 0 (0.0000) | 2 (0.0127) | 2 (0.0065) | 0 (0.0000) | 1 (0.0038) | 1 (0.0096) | 1 (0.0037) | 1 (0.0098) | 1 (0.0042) | 1 (0.0076) | 1 (0.0038) | 1 (0.0096) | 2 (0.0065) | 0 (0.0000) | 1 (0.0037) | 1 (0.0094) | 0 (0.0000) | 1 (0.0172) |
| | 13 G010101g | 1 (0.0047) | 0 (0.0000) | 1 (0.0032) | 0 (0.0000) | 1 (0.0038) | 0 (0.0000) | 1 (0.0037) | 0 (0.0000) | 0 (0.0000) | 1 (0.0076) | 1 (0.0038) | 0 (0.0000) | 1 (0.0032) | 0 (0.0000) | 0 (0.0000) | 1 (0.0094) | 1 (0.0045) | 0 (0.0000) |
| | 14 G010101j | 0 (0.0000) | 1 (0.0063) | 1 (0.0032) | 0 (0.0000) | 1 (0.0038) | 0 (0.0000) | 0 (0.0000) | 1 (0.0098) | 1 (0.0042) | 0 (0.0000) | 1 (0.0038) | 0 (0.0000) | 1 (0.0032) | 0 (0.0000) | 1 (0.0037) | 0 (0.0000) | 0 (0.0045) | 0 (0.0000) |
| | 15 G010101h | 0 (0.0000) | 1 (0.0063) | 1 (0.0032) | 0 (0.0000) | 1 (0.0038) | 0 (0.0000) | 0 (0.0000) | 1 (0.0098) | 0 (0.0000) | 1 (0.0076) | 1 (0.0038) | 0 (0.0000) | 1 (0.0032) | 0 (0.0000) | 1 (0.0037) | 0 (0.0000) | 0 (0.0000) | 0 (0.0000) |
| Total [2n] | | 212 (1.0000) | 158 (1.0000) | 304 (1.0000) | 66 (1.0000) | 266 (1.0000) | 104 (1.0000) | 268 (1.0000) | 102 (1.0000) | 238 (1.0000) | 132 (1.0000) | 266 (1.0000) | 104 (1.0000) | 306 (1.0000) | 60 (1.0000) | 264 (1.0000) | 106 (1.0000) | 222 (1.0000) | 58 (1.0000) |
| Coding | 1 G*01:01:01:01 | 50 (0.2358) | 33 (0.2089) | 66 (0.2163) | 17 (0.2575) | 58 (0.2180) | 25 (0.2404) | 61 (0.2276) | 22 (0.2157) | 53 (0.2227) | 30 (0.2273) | 62 (0.2331) | 21 (0.2019) | 72 (0.2352) | 11 (0.1833) | 55 (0.2083) | 28 (0.2641) | 53 (0.2387) | 9 (0.1551) |
| | 2 G*01:01:02:01 | 39 (0.1840) | 31 (0.1962) | 57 (0.1868) | 13 (0.1969) | 50 (0.1880) | 20 (0.1923) | 52 (0.1940) | 18 (0.1765) | 41 (0.1723) | 29 (0.2197) | 48 (0.1805) | 22 (0.2115) | 56 (0.1830) | 13 (0.2166) | 54 (0.2045) | 16 (0.1509) | 37 ^B (0.1666) | 17 ^B (0.2931) |
| | 3 G*01:01:01:05 | 19 (0.0896) | 18 (0.1139) | 29 (0.0950) | 8 (0.1212) | 29 (0.1090) | 8 (0.0769) | 31 (0.1157) | 6 (0.0588) | 24 (0.1008) | 13 (0.0985) | 28 (0.1053) | 9 (0.0865) | 34 (0.1111) | 3 (0.0500) | 26 (0.0984) | 11 (0.1037) | 27 (0.1216) | 5 (0.0862) |
| | 4 G*01:03:01:02 | 23 (0.1085) | 12 (0.0759) | 31 (0.1016) | 4 (0.0606) | 27 (0.1015) | 8 (0.0769) | 24 (0.0896) | 11 (0.1078) | 25 (0.1050) | 10 (0.0758) | 27 (0.1015) | 8 (0.0769) | 28 (0.0915) | 7 (0.1166) | 25 (0.0946) | 10 (0.0943) | 20 (0.0900) | 6 (0.1034) |
| | 5 G*01:04:01 | 13 (0.0613) | 14 (0.0886) | 23 (0.0754) | 4 (0.0606) | 19 (0.0714) | 8 (0.0769) | 18 (0.0672) | 9 (0.0882) | 22 (0.0924) | 5 (0.0379) | 22 (0.0827) | 5 (0.0481) | 22 (0.0718) | 5 (0.0833) | 18 (0.0681) | 9 (0.0849) | 9 ^C (0.0405) | 7 ^C (0.1206) |
| | 6 G*01:01:01:04 | 15 (0.0708) | 11 (0.0696) | 24 (0.0786) | 2 (0.0303) | 16 (0.0602) | 10 (0.0962) | 17 (0.0634) | 9 (0.0882) | 15 (0.0630) | 11 (0.0833) | 18 (0.0677) | 8 (0.0769) | 21 (0.0686) | 5 (0.0833) | 21 (0.0795) | 5 (0.0471) | 17 (0.0765) | 4 (0.0689) |
| | 7 G*01:04:04 | 8 (0.0377) | 11 (0.0696) | 17 (0.0557) | 2 (0.0303) | 15 (0.0564) | 4 (0.0385) | 12 (0.0448) | 7 (0.0686) | 15 (0.0630) | 4 (0.0833) | 13 (0.0489) | 6 (0.0577) | 13 (0.0424) | 4 (0.0666) | 16 (0.0606) | 3 (0.0283) | 10 (0.0450) | 1 (0.0172) |
| | 8 G*01:05N | 10 (0.0472) | 6 (0.0380) | 14 (0.0459) | 2 (0.0303) | 12 (0.0451) | 4 (0.0385) | 12 (0.0448) | 4 (0.0392) | 10 (0.0420) | 6 (0.0455) | 12 (0.0451) | 4 (0.0385) | 15 (0.0490) | 1 (0.0166) | 11 (0.0416) | 5 (0.0471) | 11 (0.0495) | 2 (0.0344) |
| | 9 G*01:06 | 11 (0.0519) | 4 (0.0253) | 11 (0.0393) | 4 (0.0606) | 12 (0.0451) | 3 (0.0288) | 11 (0.0410) | 4 (0.0392) | 8 (0.0336) | 7 (0.0530) | 11 (0.0414) | 4 (0.0385) | 14 (0.0457) | 1 (0.0166) | 9 (0.0340) | 6 (0.0566) | 10 (0.0450) | 1 (0.0172) |

| | | | | | | | | | | | | | | | | | | | | |
|-------|------------|-----------------------------------|-----------------|-----------------|-----------------|----------------|-----------------|-----------------|-----------------|-----------------|--|--|-----------------|-----------------|-----------------|----------------|-----------------|-----------------|-----------------|----------------|
| 3'UTR | 10 | G*01:01:03:03 | 8 (0.0377) | 6 (0.0380) | 11 (0.0393) | 3 (0.0454) | 10 (0.0376) | 4 (0.0385) | 11 (0.0410) | 3 (0.0294) | 10 (0.0420) | 4 (0.0833) | 8 (0.0301) | 6 (0.0577) | 11 (0.0359) | 3 (0.0500) | 12 (0.0454) | 2 (0.0188) | 10 (0.0450) | 2 (0.0344) |
| | 11 | G*01:01:01:08 | 6 (0.0283) | 3 (0.0190) | 9 (0.0295) | 0 (0.0000) | 5 (0.0188) | 4 (0.0385) | 6 (0.0224) | 3 (0.0294) | 6 (0.0252) | 3 (0.0227) | 6 (0.0226) | 3 (0.0288) | 8 (0.0261) | 1 (0.0166) | 9 (0.0340) | 0 (0.0000) | 6 (0.0270) | 1 (0.0172) |
| | 12 | G*01:01:22:01 | 6 (0.0283) | 1 (0.0063) | 6 (0.0196) | 1 (0.0151) | 5 (0.0188) | 2 (0.0192) | 5 (0.0187) | 2 (0.0196) | 1 (0.0042) | 6 (0.0455) | 4 (0.0150) | 3 (0.0288) | 6 (0.0196) | 0 (0.0000) | 2 (0.0075) | 5 (0.0471) | 3 (0.0135) | 2 (0.0344) |
| | 13 | G*01:01:01:15 | 2 (0.0094) | 2 (0.0127) | 3 (0.0098) | 1 (0.0151) | 3 (0.0113) | 1 (0.0096) | 2 (0.0075) | 2 (0.0196) | 3 (0.0126) | 1 (0.0076) | 2 (0.0075) | 2 (0.0192) | 2 (0.0065) | 2 (0.0333) | 3 (0.0113) | 1 (0.0094) | 2 (0.0090) | 1 (0.0172) |
| | 14 | G*01:01:15 compatible | 1 (0.0047) | 1 (0.0063) | 1 (0.0032) | 1 (0.0151) | 2 (0.0075) | 0 (0.0000) | 1 (0.0037) | 1 (0.0098) | 1 (0.0042) | 1 (0.0076) | 2 (0.0075) | 0 (0.0000) | 2 (0.0065) | 0 (0.0000) | 2 (0.0075) | 0 (0.0000) | 2 (0.0090) | 0 (0.0000) |
| | 15 | G*01:01:01:13 | 1 (0.0047) | 1 (0.0063) | 0 (0.0000) | 2 (0.0303) | 2 (0.0075) | 0 (0.0000) | 2 (0.0075) | 0 (0.0000) | 2 (0.0084) | 0 (0.0000) | 2 (0.0075) | 0 (0.0000) | 1 (0.0032) | 1 (0.0166) | 0 (0.0000) | 2 (0.0188) | 2 (0.0090) | 0 (0.0000) |
| | 16 | G*01:01:17 | 0 (0.0000) | 2 (0.0127) | 1 (0.0032) | 1 (0.0151) | 0 (0.0000) | 2 (0.0192) | 2 (0.0075) | 0 (0.0000) | 1 (0.0042) | 1 (0.0076) | 0 (0.0000) | 2 (0.0192) | 2 (0.0000) | 0 (0.0333) | 2 (0.0000) | 2 (0.0188) | 2 (0.0090) | 0 (0.0000) |
| | 17 | G*01:01:01:06 | 0 (0.0000) | 1 (0.0063) | 1 (0.0032) | 0 (0.0000) | 1 (0.0038) | 0 (0.0000) | 0 (0.0000) | 1 (0.0098) | 0 (0.0000) | 1 (0.0076) | 1 (0.0038) | 0 (0.0000) | 1 (0.0032) | 0 (0.0000) | 1 (0.0037) | 0 (0.0000) | 0 (0.0000) | 0 (0.0000) |
| | 18 | G*01:01:02:01 ^(+2798C) | 0 (0.0000) | 1 (0.0063) | 0 (0.0000) | 1 (0.0151) | 0 (0.0000) | 1 (0.0096) | 1 (0.0037) | 0 (0.0000) | 1 (0.0042) | 0 (0.0000) | 0 (0.0000) | 1 (0.0096) | 1 (0.0000) | 0 (0.0166) | 0 (0.0000) | 1 (0.0094) | 1 (0.0045) | 0 (0.0000) |
| | Total [2n] | | 212 (1.0000) | 158 (1.0000) | 304 (1.0000) | 66 (1.0000) | 266 (1.0000) | 104 (1.0000) | 268 (1.0000) | 102 (1.0000) | 238 (1.0000) | 132 (1.0000) | 266 (1.0000) | 104 (1.0000) | 306 (1.0000) | 60 (1.0000) | 264 (1.0000) | 106 (1.0000) | 222 (1.0000) | 58 (1.0000) |
| 3'UTR | 1 | UTR-02 | 66 (0.3113) | 45 (0.2848) | 89 (0.2927) | 22 (0.3333) | 79 (0.2970) | 32 (0.3077) | 83 (0.3097) | 28 (0.2745) | 62[Ⓛ] (0.2605) | 49[Ⓛ] (0.3712) | 75 (0.2820) | 36 (0.3462) | 91 (0.2973) | 18 (0.3000) | 76 (0.2878) | 35 (0.3301) | 64 (0.2882) | 22 (0.3793) |
| | 2 | UTR-01 | 56 (0.2642) | 38 (0.2405) | 77 (0.2532) | 17 (0.2575) | 66 (0.2481) | 28 (0.2692) | 67 (0.2500) | 27 (0.2647) | 63 (0.2348) | 31 (0.2594) | 69 (0.2404) | 25 (0.2614) | 80 (0.2333) | 14 (0.2462) | 65 (0.2735) | 29 (0.2702) | 60 (0.1896) | 11 (0.1896) |
| | 3 | UTR-03 | 21 (0.0991) | 24 (0.1519) | 39 (0.1282) | 6 (0.0909) | 34 (0.1278) | 11 (0.1058) | 30 (0.1119) | 15 (0.1471) | 36[Ⓛ] (0.1513) | 9[Ⓛ] (0.0682) | 35 (0.1316) | 10 (0.0962) | 35 (0.1143) | 8 (0.1333) | 34 (0.1287) | 11 (0.1037) | 19 (0.0855) | 7 (0.1206) |
| | 4 | UTR-04 | 19 (0.0896) | 19 (0.1203) | 29 (0.0953) | 9 (0.1363) | 29 (0.1090) | 9 (0.0865) | 31 (0.1157) | 7 (0.0686) | 23 (0.0966) | 15 (0.1136) | 29 (0.1090) | 9 (0.0865) | 35 (0.1143) | 3 (0.0500) | 27 (0.1022) | 11 (0.1037) | 27 (0.1216) | 5 (0.0862) |
| | 5 | UTR-05 | 23 (0.1085) | 12 (0.0759) | 31 (0.1019) | 4 (0.0606) | 27 (0.1015) | 8 (0.0769) | 24 (0.0896) | 11 (0.1078) | 25 (0.1050) | 10 (0.0758) | 27 (0.1015) | 8 (0.0769) | 28 (0.0915) | 7 (0.1166) | 25 (0.0946) | 10 (0.0943) | 20 (0.0900) | 6 (0.1034) |
| | 6 | UTR-06 | 11 (0.0519) | 7 (0.0443) | 14 (0.0460) | 4 (0.0606) | 12 (0.0451) | 6 (0.0577) | 14 (0.0522) | 4 (0.0392) | 10 (0.0420) | 8 (0.0606) | 13 (0.0489) | 5 (0.0481) | 16 (0.0522) | 2 (0.0333) | 15 (0.0568) | 3 (0.0283) | 13 (0.0585) | 2 (0.0344) |
| | 7 | UTR-07 | 8 (0.0377) | 6 (0.0380) | 11 (0.0361) | 3 (0.0454) | 10 (0.0376) | 4 (0.0385) | 11 (0.0410) | 3 (0.0294) | 10 (0.0420) | 4 (0.0303) | 8 (0.0301) | 6 (0.0577) | 11 (0.0359) | 3 (0.0500) | 12 (0.0454) | 2 (0.0188) | 10 (0.0450) | 2 (0.0344) |
| | 8 | UTR-18 | 7 (0.0330) | 5 (0.0316) | 11 (0.0361) | 1 (0.0151) | 8 (0.0301) | 4 (0.0385) | 8 (0.0299) | 4 (0.0392) | 6 (0.0252) | 6 (0.0455) | 8 (0.0301) | 4 (0.0385) | 8 (0.0261) | 4 (0.0666) | 8 (0.0303) | 4 (0.0377) | 9 (0.0405) | 1 (0.0172) |
| | 9 | UTR-20 | 1 (0.0047) | 1 (0.0063) | 2 (0.0065) | 0 (0.0000) | 1 (0.0038) | 1 (0.0096) | 0 (0.0000) | 2 (0.0196) | 2 (0.0084) | 0 (0.0000) | 2 (0.0075) | 0 (0.0000) | 2 (0.0065) | 0 (0.0000) | 2 (0.0075) | 0 (0.0000) | 0 (0.0000) | 1 (0.0172) |
| | 10 | UTR-13 | 0 (0.0000) | 1 (0.0063) | 1 (0.0032) | 0 (0.0000) | 0 (0.0000) | 1 (0.0096) | 0 (0.0000) | 1 (0.0098) | 1 (0.0042) | 0 (0.0000) | 0 (0.0000) | 1 (0.0096) | 0 (0.0000) | 1 (0.0166) | 0 (0.0000) | 1 (0.0094) | 0 (0.0000) | 1 (0.0172) |
| | Total [2n] | | 212 (1.0000) | 158 (1.0000) | 304 (1.0000) | 66 (1.0000) | 266 (1.0000) | 104 (1.0000) | 268 (1.0000) | 102 (1.0000) | 238 (1.0000) | 132 (1.0000) | 266 (1.0000) | 104 (1.0000) | 306 (1.0000) | 60 (1.0000) | 264 (1.0000) | 106 (1.0000) | 222 (1.0000) | 58 (1.0000) |

5'URR: 5' upstream region. 3'UTR: 3' untranslated region. Freq: Frequency. Haplotypes in order of total frequency. Association of haplotypes with histopathological features of PTC was made by using Fisher's exact test and P-values below 0.05 are highlighted in bold. [Ⓛ] Low-risk/more frequent subtypes (Classic + Follicular) or high-risk/less frequent subtypes (Oncocytic, solid, trabecular and others). [Ⓢ] Information not available for 2 PTC patients (total *n* = 183). Tumor node metastasis (TNM) system refers to the primary tumor, lymph node metastasis and distant metastasis. [Ⓢ] Information not available for 45 PTC patients (total *n* = 140). Complete (the sum of patients presenting excellent and indeterminate responses) or incomplete (the sum of patients presenting biochemical and structural incomplete responses).

[Ⓐ] OR: 0.3360; 95% CI: 0.1446-0.7810; *P*: 0.0089.

[Ⓑ] OR: 2.0732; 95% CI: 1.0646-4.0374; *P*: 0.0392.

[Ⓒ] OR: 3.2484; 95% CI: 1.1552-9.1345; *P*: 0.0279.

[Ⓓ] OR: 1.6759; 95% CI: 1.0616-2.6456; *P*: 0.0328.

[Ⓔ] OR: 0.4106; 95% CI: 0.1912-0.8815; *P*: 0.0200.

OR: Odds ratio. CI: Confidence interval.

Table S3. Association between *HLA-G* extended haplotypes and histopathological features of PTC (*n* = 185) (Continuation of **Table 2**).

| HLA-G extended haplotypes | | | | Tumor size | | Histological Subtype ϕ | | Tumor invasion | | Extrathyroidal extension | | Multicentricity | | Metastasis at diagnosis | | TNM Staging 8 th θ | | Hashimoto's thyroiditis | | Response to therapy # | |
|---------------------------|----------|-------------------------|---------------------|---------------------|---------------------|-----------------------------|---------------------|---------------------|---------------------|--------------------------|---------------------|---------------------|---------------------|-------------------------|---------------------|--------------------------------------|---------------------|-------------------------|---------------------|-----------------------|----------------|
| 5'URR | Coding | 3'UTR | <2 cm | \geq 2 cm | Low risk | High risk | Absent | Present | Absent | Present | Absent | Present | Absent | Present | I | II/III/IV | Absent | Present | Complete | Incomplete | |
| | | | <i>n</i> = 106 | <i>n</i> = 79 | <i>n</i> = 152 | <i>n</i> = 33 | <i>n</i> = 133 | <i>n</i> = 52 | <i>n</i> = 134 | <i>n</i> = 51 | <i>n</i> = 119 | <i>n</i> = 66 | <i>n</i> = 133 | <i>n</i> = 52 | <i>n</i> = 153 | <i>n</i> = 30 | <i>n</i> = 132 | <i>n</i> = 53 | <i>n</i> = 111 | <i>n</i> = 29 | |
| | | | <i>n</i> (freq.) | <i>n</i> (freq.) | <i>n</i> (freq.) | <i>n</i> (freq.) | <i>n</i> (freq.) | <i>n</i> (freq.) | <i>n</i> (freq.) | <i>n</i> (freq.) | <i>n</i> (freq.) | <i>n</i> (freq.) | <i>n</i> (freq.) | <i>n</i> (freq.) | <i>n</i> (freq.) | <i>n</i> (freq.) | <i>n</i> (freq.) | <i>n</i> (freq.) | <i>n</i> (freq.) | <i>n</i> (freq.) | |
| 18 | G010101d | 01:01:01:15 | UTR-01 | 2 (0.0094) | 2 (0.0127) | 3 (0.0098) | 1 (0.0151) | 3 (0.0113) | 1 (0.0096) | 2 (0.0075) | 2 (0.0196) | 3 (0.0126) | 1 (0.0076) | 2 (0.0075) | 2 (0.0192) | 2 (0.0065) | 2 (0.0333) | 3 (0.0113) | 1 (0.0094) | 2 (0.0090) | 1 (0.0172) |
| 19 | G010101f | 01:01:01:04 | UTR-20 | 1 (0.0047) | 1 (0.0063) | 2 (0.0065) | 0 (0.0000) | 1 (0.0038) | 1 (0.0096) | 0 (0.0000) | 2 (0.0196) | 2 (0.0084) | 0 (0.0000) | 2 (0.0075) | 0 (0.0000) | 2 (0.0065) | 0 (0.0000) | 2 (0.0075) | 0 (0.0000) | 0 (0.0000) | 1 (0.0172) |
| 20 | G010101a | 01:01:01:01 | UTR-06 | 2 (0.0094) | 0 (0.0000) | 2 (0.0065) | 0 (0.0000) | 1 (0.0038) | 1 (0.0096) | 2 (0.0075) | 0 (0.0000) | 0 (0.0000) | 2 (0.0152) | 1 (0.0038) | 1 (0.0096) | 2 (0.0065) | 0 (0.0000) | 2 (0.0075) | 0 (0.0000) | 1 (0.0045) | 0 (0.0000) |
| 21 | G010102d | 01:01:02:01 | UTR-02 | 0 (0.0000) | 2 (0.0127) | 2 (0.0065) | 0 (0.0000) | 1 (0.0038) | 1 (0.0096) | 1 (0.0037) | 1 (0.0098) | 1 (0.0042) | 1 (0.0076) | 1 (0.0038) | 1 (0.0096) | 2 (0.0065) | 0 (0.0000) | 1 (0.0037) | 1 (0.0094) | 0 (0.0000) | 1 (0.0172) |
| 22 | G010102a | 01:01:17 | UTR-02 | 0 (0.0000) | 2 (0.0127) | 1 (0.0032) | 1 (0.0151) | 0 (0.0000) | 2 (0.0192) | 2 (0.0075) | 0 (0.0000) | 1 (0.0042) | 1 (0.0076) | 0 (0.0000) | 2 (0.0192) | 0 (0.0000) | 2 (0.0333) | 0 (0.0000) | 2 (0.0188) | 2 (0.0090) | 0 (0.0000) |
| 23 | G010101b | 01:01:15 compatible | UTR-06 | 1 (0.0047) | 1 (0.0063) | 1 (0.0032) | 1 (0.0151) | 2 (0.0075) | 0 (0.0000) | 1 (0.0037) | 1 (0.0098) | 1 (0.0042) | 1 (0.0076) | 2 (0.0075) | 0 (0.0000) | 2 (0.0065) | 0 (0.0000) | 2 (0.0075) | 0 (0.0000) | 2 (0.0090) | 0 (0.0000) |
| 24 | G010101f | 01:01:01:13 | UTR-06 | 1 (0.0047) | 1 (0.0063) | 0 (0.0000) | 2 (0.0303) | 2 (0.0075) | 0 (0.0000) | 2 (0.0075) | 0 (0.0000) | 2 (0.0084) | 0 (0.0000) | 2 (0.0075) | 0 (0.0000) | 1 (0.0032) | 1 (0.0166) | 0 (0.0000) | 2 (0.0188) | 2 (0.0090) | 0 (0.0000) |
| 25 | G0104a | 01:04:01 | UTR-13 | 0 (0.0000) | 1 (0.0063) | 1 (0.0032) | 0 (0.0000) | 0 (0.0000) | 1 (0.0096) | 0 (0.0000) | 1 (0.0098) | 1 (0.0042) | 0 (0.0000) | 0 (0.0000) | 1 (0.0096) | 0 (0.0000) | 1 (0.0166) | 0 (0.0000) | 1 (0.0094) | 0 (0.0000) | 1 (0.0172) |
| 26 | G010101g | 01:01:01:01 | UTR-01 | 1 (0.0047) | 0 (0.0000) | 1 (0.0032) | 0 (0.0000) | 1 (0.0038) | 0 (0.0000) | 1 (0.0037) | 0 (0.0000) | 0 (0.0000) | 1 (0.0076) | 1 (0.0038) | 0 (0.0000) | 1 (0.0032) | 0 (0.0000) | 0 (0.0000) | 1 (0.0094) | 1 (0.0045) | 0 (0.0000) |
| 27 | G010102a | 01:01:02:01 (+2798G) | UTR-02 | 0 (0.0000) | 1 (0.0063) | 0 (0.0000) | 1 (0.0151) | 0 (0.0000) | 1 (0.0096) | 1 (0.0037) | 0 (0.0000) | 1 (0.0042) | 0 (0.0000) | 0 (0.0000) | 1 (0.0096) | 0 (0.0000) | 1 (0.0166) | 0 (0.0000) | 1 (0.0094) | 1 (0.0045) | 0 (0.0000) |
| 28 | G010101a | 01:01:02:01 | UTR-02 | 0 (0.0000) | 1 (0.0063) | 1 (0.0032) | 0 (0.0000) | 1 (0.0038) | 0 (0.0000) | 1 (0.0037) | 0 (0.0000) | 0 (0.0000) | 1 (0.0076) | 0 (0.0000) | 1 (0.0096) | 1 (0.0032) | 0 (0.0000) | 1 (0.0037) | 0 (0.0000) | 0 (0.0000) | 0 (0.0000) |
| 29 | G010101a | 01:01:01:04 | UTR-18 | 1 (0.0047) | 0 (0.0000) | 1 (0.0032) | 0 (0.0000) | 1 (0.0038) | 0 (0.0000) | 0 (0.0000) | 1 (0.0098) | 0 (0.0000) | 1 (0.0076) | 1 (0.0038) | 0 (0.0000) | 1 (0.0032) | 0 (0.0000) | 1 (0.0037) | 0 (0.0000) | 1 (0.0045) | 0 (0.0000) |
| 30 | G010101j | 01:01:01:01 | UTR-01 | 0 (0.0000) | 1 (0.0063) | 1 (0.0032) | 0 (0.0000) | 1 (0.0038) | 0 (0.0000) | 0 (0.0000) | 1 (0.0098) | 1 (0.0042) | 0 (0.0000) | 1 (0.0038) | 0 (0.0000) | 1 (0.0032) | 0 (0.0000) | 1 (0.0037) | 0 (0.0000) | 1 (0.0045) | 0 (0.0000) |
| 31 | G010101a | 01:01:01:01 | UTR-04 | 1 (0.0047) | 0 (0.0000) | 0 (0.0000) | 1 (0.0151) | 0 (0.0000) | 1 (0.0096) | 1 (0.0037) | 0 (0.0000) | 0 (0.0000) | 1 (0.0076) | 1 (0.0038) | 0 (0.0000) | 1 (0.0032) | 0 (0.0000) | 1 (0.0037) | 0 (0.0000) | 1 (0.0045) | 0 (0.0000) |
| 32 | G010101b | 01:01:01:05 | UTR-01 | 1 (0.0047) | 0 (0.0000) | 1 (0.0032) | 0 (0.0000) | 1 (0.0038) | 0 (0.0000) | 1 (0.0037) | 0 (0.0000) | 1 (0.0042) | 0 (0.0000) | 1 (0.0038) | 0 (0.0000) | 1 (0.0032) | 0 (0.0000) | 1 (0.0037) | 0 (0.0000) | 1 (0.0045) | 0 (0.0000) |
| 33 | G010101h | 01:01:01:06 | UTR-04 | 0 (0.0000) | 1 (0.0063) | 1 (0.0032) | 0 (0.0000) | 1 (0.0038) | 0 (0.0000) | 0 (0.0000) | 1 (0.0098) | 0 (0.0000) | 1 (0.0076) | 1 (0.0038) | 0 (0.0000) | 1 (0.0032) | 0 (0.0000) | 1 (0.0037) | 0 (0.0000) | 0 (0.0000) | 0 (0.0000) |
| Total [2n] * | | | | 212 (1.0000) | 158 (1.0000) | 304 (1.0000) | 66 (1.0000) | 266 (1.0000) | 104 (1.0000) | 268 (1.0000) | 102 (1.0000) | 238 (1.0000) | 132 (1.0000) | 266 (1.0000) | 104 (1.0000) | 306 (1.0000) | 60 (1.0000) | 264 (1.0000) | 106 (1.0000) | 222 (1.0000) | 58 (1.0000) |

5'URR: 5' upstream region. 3'UTR: 3' untranslated region. Freq: Frequency. Haplotypes in order of total frequency. Association of haplotypes with histopathological features of PTC was made by using Fisher's exact test and *P*-values below 0.05 are highlighted in bold. ϕ Low-risk/more frequent subtypes (Classic + Follicular) or high-risk/less frequent subtypes (Oncocytic, solid, trabecular and others). θ Information not available for 2 PTC patients (total *n* = 183). Tumor node metastasis (TNM) system refers to the primary tumor, lymph node metastasis and distant metastasis. # Information not available for 45 PTC patients (total *n* = 140). Complete (the sum of patients presenting excellent and indeterminate responses) or incomplete (the sum of patients presenting biochemical and structural incomplete responses). * Total [2n] refers to the sum of all haplotypes within both Table 2 and Table S3.

Table S4. HLA-G 5'UTR, coding and 3'UTR haplotypes in papillary thyroid carcinoma (PTC) patients according to the expression of HLA-G in the tumor microenvironment [n = 170].

| HLA-G haplotypes | | HLA-G tumor expression # | | | | | | OR | 95% CI | P |
|------------------|----|--------------------------|-----|-----------|---------------|-----------|---------------|---------------|-------------------------|---------------|
| | | Low | | | High | | | | | |
| | | n | n | Freq. | n | Freq. | | | | |
| 5'UTR | 1 | G010102a | 115 | 37 | 0.3627 | 78 | 0.3277 | 0.8564 | 0.5267 - 1.3923 | 0.5344 |
| | 2 | G010101a | 75 | 21 | 0.2059 | 54 | 0.2269 | 1.1320 | 0.6415 - 1.9972 | 0.7755 |
| | 3 | G0104a | 37 | 15 | 0.1471 | 22 | 0.0924 | 0.5907 | 0.2927 - 1.1918 | 0.1822 |
| | 4 | G010101f | 27 | 7 | 0.0686 | 20 | 0.0840 | 1.2451 | 0.5093 - 3.0435 | 0.8270 |
| | 5 | G010101b | 19 | 6 | 0.0588 | 13 | 0.0546 | 0.9244 | 0.3413 - 2.5038 | 1.0000 |
| | 6 | G0103a | 16 | 5 | 0.0490 | 11 | 0.0462 | 0.9401 | 0.3181 - 2.7780 | 1.0000 |
| | 7 | G010101c | 15 | 1 | 0.0098 | 14 | 0.0588 | 6.3125 | 0.8189 - 48.6592 | 0.0457 |
| | 8 | G010101d | 12 | 3 | 0.0294 | 9 | 0.0378 | 1.2969 | 0.3437 - 4.8927 | 1.0000 |
| | 9 | G0103e | 8 | 2 | 0.0196 | 6 | 0.0252 | 1.2931 | 0.2565 - 6.5171 | 1.0000 |
| | 10 | G0103d | 6 | 1 | 0.0098 | 5 | 0.0210 | 2.1674 | 0.2500 - 18.7878 | 0.6729 |
| | 11 | G0104b | 5 | 2 | 0.0196 | 3 | 0.0126 | 0.6383 | 0.1050 - 3.8786 | 0.6383 |
| | 12 | G010102d | 2 | 1 | 0.0098 | 1 | 0.0042 | 0.4262 | 0.0263 - 6.8801 | 0.5106 |
| | 13 | G010101g | 1 | 1 | 0.0098 | 0 | 0.0000 | 0.1419 | 0.0057 - 3.5117 | 0.3000 |
| | 14 | G010101j | 1 | 0 | 0.0000 | 1 | 0.0042 | 1.2947 | 0.0523 - 32.0496 | 1.0000 |
| | 15 | G010101h | 1 | 0 | 0.0000 | 1 | 0.0042 | 1.2947 | 0.0523 - 32.0496 | 1.0000 |
| Total [2n] | | 340 | 102 | 1.0000 | 238 | 1.0000 | - | - | - | |
| Coding | 1 | G*01:01:01:01 | 76 | 21 | 0.2059 | 55 | 0.2311 | 1.1593 | 0.6577 - 2.0431 | 0.6713 |
| | 2 | G*01:01:02:01 | 67 | 29 | 0.2843 | 38 | 0.1597 | 0.4783 | 0.2752 - 0.8311 | 0.0111 |
| | 3 | G*01:01:01:05 | 32 | 7 | 0.0686 | 25 | 0.1050 | 1.5929 | 0.6658 - 3.8108 | 0.4173 |
| | 4 | G*01:03:01:02 | 30 | 8 | 0.0784 | 22 | 0.0924 | 1.1968 | 0.5142 - 2.7850 | 0.8353 |
| | 5 | G*01:01:01:04 | 25 | 6 | 0.0588 | 19 | 0.0798 | 1.3881 | 0.5375 - 3.5845 | 0.6513 |
| | 6 | G*1:04:01 | 23 | 11 | 0.1078 | 12 | 0.0504 | 0.4393 | 0.1870 - 1.0313 | 0.0616 |
| | 7 | G*1:04:04 | 19 | 6 | 0.0588 | 13 | 0.0546 | 0.9244 | 0.3413 - 2.5038 | 1.0000 |
| | 8 | G*1:06 | 15 | 4 | 0.0392 | 11 | 0.0462 | 1.1872 | 0.3689 - 3.8200 | 1.0000 |
| | 9 | G*01:05N | 13 | 2 | 0.0196 | 11 | 0.0462 | 2.4229 | 0.5273 - 11.1323 | 0.3583 |
| | 10 | G*01:01:03:03 | 13 | 2 | 0.0196 | 11 | 0.0462 | 2.4229 | 0.5273 - 11.1323 | 0.3583 |
| | 11 | G*01:01:01:08 | 8 | 3 | 0.0294 | 5 | 0.0210 | 0.7082 | 0.1660 - 3.0205 | 0.7007 |
| | 12 | G*01:01:22:01 | 7 | 0 | 0.0000 | 7 | 0.0294 | 6.6415 | 0.3757 - 117.3865 | 0.1076 |
| | 13 | G*01:01:01:15 | 4 | 0 | 0.0000 | 4 | 0.0168 | 3.9339 | 0.2098 - 73.7422 | 0.3207 |
| | 14 | G*01:01:15compatible | 2 | 0 | 0.0000 | 2 | 0.0084 | 2.1670 | 0.1031 - 45.5380 | 1.0000 |
| | 15 | G*01:01:01:13 | 2 | 1 | 0.0098 | 1 | 0.0042 | 0.4262 | 0.0263 - 6.8801 | 0.5106 |
| | 16 | G*01:01:17 | 2 | 1 | 0.0098 | 1 | 0.0042 | 0.4262 | 0.0263 - 6.8801 | 0.5106 |
| | 17 | G*01:01:01:06 | 1 | 0 | 0.0000 | 1 | 0.0042 | 1.2947 | 0.0523 - 32.0496 | 1.0000 |
| | 18 | G*01:01:02:01(+2798G) | 1 | 1 | 0.0098 | 0 | 0.0000 | 0.1419 | 0.0057 - 3.5117 | 0.3000 |
| Total [2n] | | 340 | 102 | 1.0000 | 238 | 1.0000 | - | - | - | |
| 3'UTR | 1 | UTR-02 | 105 | 37 | 0.3627 | 68 | 0.2857 | 0.7027 | 0.4296 - 1.1492 | 0.1616 |
| | 2 | UTR-01 | 86 | 23 | 0.2255 | 63 | 0.2647 | 1.2365 | 0.7159 - 2.1355 | 0.4975 |
| | 3 | UTR-03 | 41 | 16 | 0.1569 | 25 | 0.1050 | 0.6309 | 0.3210 - 1.2398 | 0.2039 |
| | 4 | UTR-04 | 33 | 7 | 0.0686 | 26 | 0.1092 | 1.6644 | 0.6980 - 3.9686 | 0.3186 |
| | 5 | UTR-05 | 30 | 8 | 0.0784 | 22 | 0.0924 | 1.1968 | 0.5142 - 2.7850 | 0.8353 |
| | 6 | UTR-06 | 18 | 5 | 0.0490 | 13 | 0.0546 | 1.1209 | 0.3889 - 3.2305 | 1.0000 |
| | 7 | UTR-07 | 13 | 2 | 0.0196 | 11 | 0.0462 | 2.4229 | 0.5273 - 11.1323 | 0.3583 |
| | 8 | UTR-18 | 11 | 3 | 0.0294 | 8 | 0.0336 | 1.1478 | 0.2982 - 4.4172 | 1.0000 |
| | 9 | UTR-20 | 2 | 0 | 0.0000 | 2 | 0.0084 | 2.1670 | 0.1031 - 45.5380 | 1.0000 |
| | 10 | UTR-13 | 1 | 1 | 0.0098 | 0 | 0.0000 | 0.1419 | 0.0057 - 3.5117 | 0.3000 |
| Total [2n] | | 340 | 102 | 1.0000 | 238 | 1.0000 | - | - | - | |

5'UTR: 5' upstream region. 3'UTR: 3' untranslated region. OR: Odds Ratio. CI: Confidence Interval. Freq: Frequency. Haplotypes in order of total frequency. Association of haplotypes with HLA-G tumor expression was made by using Fisher's exact test and P-values below 0.05 are highlighted in bold. # Low ($\leq 50\%$ of positive tumor cells) or high ($> 50\%$ of positive tumor cells).

Table S5. HLA-G 5'UTR, coding and 3'UTR haplotypes in papillary thyroid carcinoma (PTC) patients according to sHLA-G detection in plasma before thyroidectomy [n = 84].

| HLA-G haplotypes | | sHLA-G | | | | | OR | 95% CI | P | |
|------------------|----|-----------------------|----|------------|--------|--------|--------|---------|-------------------|--------|
| | | Undetectable | | Detectable | | | | | | |
| | | n | n | Fr̄eq. | n | Fr̄eq. | | | | |
| 5'UTR | 1 | G010102a | 59 | 33 | 0.4125 | 26 | 0.2955 | 0.5973 | 0.3153 - 1.1311 | 0.1452 |
| | 2 | G010101a | 30 | 12 | 0.1500 | 18 | 0.2045 | 1.4571 | 0.6527 - 3.2528 | 0.4221 |
| | 3 | G0104a | 18 | 8 | 0.1000 | 10 | 0.1136 | 1.1538 | 0.4316 - 3.0846 | 0.8081 |
| | 4 | G010101f | 14 | 6 | 0.0750 | 8 | 0.0909 | 1.2333 | 0.4086 - 3.7225 | 0.7850 |
| | 5 | G010101b | 8 | 4 | 0.0500 | 4 | 0.0455 | 0.9048 | 0.2186 - 3.7439 | 1.0000 |
| | 6 | G0103a | 8 | 2 | 0.0250 | 6 | 0.0682 | 2.8537 | 0.5590 - 14.5654 | 0.2817 |
| | 7 | G010101c | 7 | 3 | 0.0375 | 4 | 0.0455 | 1.2222 | 0.2650 - 5.6362 | 1.0000 |
| | 8 | G010101d | 7 | 3 | 0.0375 | 4 | 0.0455 | 1.2222 | 0.2650 - 5.6362 | 1.0000 |
| | 9 | G0103e | 7 | 3 | 0.0375 | 4 | 0.0455 | 1.2222 | 0.2650 - 5.6362 | 1.0000 |
| | 10 | G0104b | 5 | 3 | 0.0375 | 2 | 0.0227 | 0.5969 | 0.0971 - 3.6671 | 0.6698 |
| | 11 | G0103d | 4 | 3 | 0.0375 | 1 | 0.0114 | 0.2950 | 0.0300 - 2.8954 | 0.3480 |
| | 12 | G010101h | 1 | 0 | 0.0000 | 1 | 0.0114 | 2.7600 | 0.1108 - 68.7254 | 1.0000 |
| Total [2n] | | 168 | 80 | 1.0000 | 88 | 1.0000 | - | - | - | |
| Coding | 1 | G*01:01:01:01 | 29 | 12 | 0.1500 | 17 | 0.1932 | 1.3568 | 0.6033 - 3.0510 | 0.5417 |
| | 2 | G*01:01:02:01 | 28 | 19 | 0.2375 | 9 | 0.1023 | 0.3658 | 0.1546 - 0.8648 | 0.0228 |
| | 3 | G*01:03:01:02 | 19 | 8 | 0.1000 | 11 | 0.1250 | 1.2857 | 0.4894 - 3.3772 | 0.6355 |
| | 4 | G*01:01:01:05 | 15 | 7 | 0.0875 | 8 | 0.0909 | 1.0429 | 0.3602 - 3.0185 | 1.0000 |
| | 5 | G*1:04:01 | 15 | 6 | 0.0750 | 9 | 0.1023 | 1.4051 | 0.4768 - 4.1397 | 0.5968 |
| | 6 | G*01:01:01:04 | 15 | 6 | 0.0750 | 9 | 0.1023 | 1.4051 | 0.4768 - 4.1397 | 0.5968 |
| | 7 | G*1:04:04 | 8 | 5 | 0.0625 | 3 | 0.0341 | 0.5294 | 0.1223 - 2.2902 | 0.4802 |
| | 8 | G*01:05N | 8 | 4 | 0.0500 | 4 | 0.0455 | 0.9048 | 0.2186 - 3.7439 | 1.0000 |
| | 9 | G*1:06 | 8 | 6 | 0.0750 | 2 | 0.0227 | 0.2868 | 0.0561 - 1.4641 | 0.1528 |
| | 10 | G*01:01:03:03 | 7 | 2 | 0.0250 | 5 | 0.0568 | 2.3494 | 0.4428 - 12.4641 | 0.4470 |
| | 11 | G*01:01:01:08 | 5 | 3 | 0.0375 | 2 | 0.0227 | 0.5969 | 0.0971 - 3.6671 | 0.6698 |
| | 12 | G*01:01:22:01 | 5 | 2 | 0.0250 | 3 | 0.0341 | 1.3765 | 0.2240 - 8.4563 | 1.0000 |
| | 13 | G*01:01:01:15 | 2 | 0 | 0.0000 | 2 | 0.0227 | 4.6532 | 0.2200 - 98.4006 | 0.4981 |
| | 14 | G*01:01:17 | 2 | 0 | 0.0000 | 2 | 0.0227 | 4.6532 | 0.2200 - 98.4006 | 0.4981 |
| | 15 | G*01:01:01:06 | 1 | 0 | 0.0000 | 1 | 0.0114 | 2.7600 | 0.1108 - 68.7254 | 1.0000 |
| | 16 | G*01:01:02:01(+2798G) | 1 | 0 | 0.0000 | 1 | 0.0114 | 2.7600 | 0.1108 - 68.7254 | 1.0000 |
| Total [2n] | | 168 | 80 | 1.0000 | 88 | 1.0000 | - | - | - | |
| 3'UTR | 1 | UTR-02 | 52 | 31 | 0.3875 | 21 | 0.2386 | 0.4954 | 0.2547 - 0.9636 | 0.0453 |
| | 2 | UTR-01 | 35 | 14 | 0.1750 | 21 | 0.2386 | 1.4776 | 0.6931 - 3.1496 | 0.3458 |
| | 3 | UTR-03 | 23 | 11 | 0.1375 | 12 | 0.1364 | 0.9904 | 0.4105 - 2.3894 | 1.0000 |
| | 4 | UTR-05 | 19 | 8 | 0.1000 | 11 | 0.1250 | 1.2857 | 0.4894 - 3.3772 | 0.6355 |
| | 5 | UTR-04 | 16 | 8 | 0.1000 | 8 | 0.0909 | 0.9000 | 0.3211 - 2.5219 | 1.0000 |
| | 6 | UTR-06 | 9 | 5 | 0.0625 | 4 | 0.0455 | 0.7143 | 0.1849 - 2.7584 | 0.7377 |
| | 7 | UTR-07 | 7 | 2 | 0.0250 | 5 | 0.0568 | 2.3494 | 0.4428 - 12.4641 | 0.4470 |
| | 8 | UTR-18 | 6 | 0 | 0.0000 | 6 | 0.0682 | 12.6848 | 0.7030 - 228.8785 | 0.0295 |
| | 9 | UTR-20 | 1 | 1 | 0.0125 | 0 | 0.0000 | 0.2994 | 0.0120 - 7.4562 | 0.4762 |
| Total [2n] | | 168 | 80 | 1.0000 | 88 | 1.0000 | - | - | - | |

5'UTR: 5' upstream region. 3'UTR: 3' untranslated region. OR: Odds Ratio. CI: Confidence Interval. Freq: Frequency. Haplotypes in order of total frequency. Association of haplotypes with sHLA-G detection was made by using Fisher's exact test and *P*-values below 0.05 are highlighted in bold.