Supplementary Table 6: P-values of the mutation frequencies between HPV+ OPSCC of patients with LDR and HPV- OPSCC.

| HPV+ OPSCC of patients with LDR | HPV- OPSCC |   |   |
|-------------------------------|------------|---|---|
|                               | all        | patients without LDR | patients with LDR |
| **TP53**                      | 0.014      | 0.017                     | 0.059             |
| **RB1**                       | 0.179      | 0.078                     | 0.549             |
| **STK11**                     | 0.653      | 0.931                     | 0.486             |
| **CDH1**                      | 0.492      | 0.274                     | 1.000             |
| **HRAS**                      | 0.260      | 0.739                     | 0.102             |
| **KRAS**                      | 0.065      | **0.034**                 | 0.150             |
| **NRAS**                      | 0.155      | 0.063                     | 0.521             |
| **FAT1**                      | 0.461      | 0.113                     | 0.606             |
| **PIK3CA**                     | 0.935      | 0.890                     | 0.773             |
| **PIK3R1**                     | 0.973      | 0.419                     | 0.370             |
| **PTEN**                       | 0.805      | 0.387                     | 0.521             |
| **FANCA**                      | 0.639      | 0.404                     | 0.940             |
| **FBXW7**                      | 0.900      | 0.507                     | 0.582             |
| **CYLD**                       | 0.334      | 0.273                     | 0.521             |
| **BCL6**                       | 0.707      | 0.326                     | 0.655             |
| **TP63**                       | 0.646      | 0.307                     | 0.781             |
| **TAF1**                       | 0.809      | 0.677                     | 0.353             |
| **EP300**                      | 0.886      | 0.525                     | 0.630             |
| **DDX3X**                      | 0.445      | 0.217                     | 0.954             |
| **NOTCH1**                     | 0.325      | 0.175                     | 0.731             |
| **JAK1**                       | 0.694      | 0.521                     | 1.000             |
| **JAK2**                       | 0.770      | 0.650                     | 0.257             |
| **PDGFRA**                     | 0.546      | 0.353                     | 0.940             |

P-values were calculated by Mann-Whitney-U test for independent samples; p-values ≤0.05 in bold.