

**Supplementary Table S1**  
**HPV distribution and correlation with PAX1<sup>m</sup> / JAM3<sup>m</sup> in 187 hrHPV genotypes**

| HPV genotype | Infection rate %(n) | Infection rate of HPV duration $\geq 3$ years, %(n) | PAX1 <sup>m</sup> |       | JAM3 <sup>m</sup> |       |
|--------------|---------------------|---|-------------------|-------|-------------------|-------|
|              |                     |   | Rho               | p     | Rho               | p     |
| HPV16        | 24.6(46)            | 16.6(15)  | -0.252            | 0.090 | -0.262            | 0.079 |
| HPV52        | 23.5(44)            | 17.7(16)  | -0.073            | 0.638 | -0.023            | 0.884 |
| HPV58        | 15.5(29)            | 10.0(9)   | 0.181             | 0.348 | -0.085            | 0.661 |
| HPV31        | 12.8(24)            | 7.8(7)  | 0.295             | 0.162 | 0.117             | 0.584 |
| HPV56        | 10.7(20)            | 11.1(10)  | 0.167             | 0.480 | -0.107            | 0.653 |
| HPV39        | 9.6(18)             | 5.6(5)  | -0.119            | 0.638 | -0.108            | 0.668 |
| HPV18        | 8.6(16)             | 7.8(7)  | -0.226            | 0.398 | -0.088            | 0.746 |
| HPV51        | 7.0(13)             | 5.6(5)  | -0.424            | 0.152 | -0.582            | 0.040 |
| HPV59        | 6.4(12)             | 4.4(4)  | 0.032             | 0.923 | 0.025             | 0.940 |
| HPV66        | 6.4(12)             | 2.2(2)  | 0.483             | 0.115 | -0.413            | 0.184 |
| HPV33        | 5.3(10)             | 4.4(4)  | -0.430            | 0.218 | 0.357             | 0.313 |
| HPV68        | 3.7(7)              | 2.2(2)  | 0.393             | 0.396 | 0.464             | 0.302 |
| HPV35        | 2.7(5)              | 3.3(3)  | -0.400            | 0.517 | -0.900            | 0.083 |
| HPV45        | 0.5(1)              | 1.1(1)  | -                 | -     | -                 | -     |

Only one case of HPV45, the spearman correlation analysis was impossible.