

**Appendix Table V: Candidate genes that are differentially expressed in papillomas.**

| <u>Gene name</u>                                  | <u>Mean Fold Change</u> | <u>NLM Accession</u> | <u>Affymetrix Unique Identifier</u> | <u>Gene Description</u>                                     |
|---|-------------------------|----------------------|-------------------------------------|---|
| <b>A.Immunologically Relevant Genes</b>           |                         |                      |                                     |   |
| <b>A1.Chemokines and chemokine receptors</b>      |                         |                      |                                     |   |
| CCL5  | -3.7                    | M21121<br>NM_0029    | 1405_i_at                           | T cell-specific protein precursor; (RANTES)                 |
| CCL5  | -3.6                    | 85<br>NM_0041        | 204655_at<br>205392_s_              | Chemokine Ligand 5  |
| CCL14   | -6.4                    | 66                   | at                                  | CCL 14  |
| CCL19   | -3.8                    | U88321<br>NM_0045    | 210072_at                           | Small inducible cytokine subfamily A (Cys-Cys), member 19   |
| CCL20   | 5.1                     | 91<br>NM_0029        | 205476_at                           | Small inducible cytokine subfamily A (Cys-Cys), member 20   |
| CCL21   | -4.3                    | 89<br>NM_0015        | 204606_at                           | Small inducible cytokine subfamily A (Cys-Cys), member 21   |
| CXCL1   | 3.7                     | 11<br>NM_0029        | 204470_at                           | GRO1 oncogene (melanoma growth stimulating activity, alpha) |
| CXCL6   | 3.3                     | 93<br>NM_0005        | 206336_at<br>202859_x_              | Small inducible cytokine subfamily B (Cys-X-Cys), member 6  |
| CXCL8   | 4.8                     | 84                   | at                                  | Interleukin 8 (also in cancer)                              |
| CXCL12  | -6.1                    | U19495               | 209687_at                           | Stromal cell-derived factor 1(also in cancer)               |
| CXCR7   | 3.7                     | AI817041<br>NM_0020  | 212977_at<br>208355_s_              | Chemokine (C-X-C motif) receptor 7(also in cancer)          |
| DARC  | -3.1                    | 36                   | at                                  | Duffy blood group, chemokine receptor(also in cancer)       |
| <b>A2. Interleukins and interleukin receptors</b> |                         |                      |                                     |   |
| IL1R2   | -5.1                    | NM_0046<br>33        | 205403_at<br>211372_s_              | Interleukin 1 receptor, type II                             |
| IL1R2   | -3.1                    | U64094<br>NM_0196    | at                                  | Interleukin 1 receptor, type II                             |
| IL1F9   | 6.9                     | 18<br>NM_0165        | 220322_at                           | Interleukin-1 homolog 1                                     |
| IL23A   | 3.5                     | 84                   | 220054_at                           | Interleukin 23, alpha subunit p19 (also in cancer)          |
| <b>A3. Innate immunity</b>                        |                         |                      |                                     |   |
| ABCA8   | -14.1                   | NM_0071<br>68        | 204719_at                           | ATP-binding cassette (ABC1)                                 |
| DEFβ4   | 16.1                    | NM_0049<br>42        | 207356_at                           | Defensin, beta 4  |
| S100A12   | 3.3                     | NM_0056<br>21        | 205863_at                           | S100 calcium-binding protein A12 (calgranulin C)            |
| <b>A4. Immunoglobulin</b>                         |                         |                      |                                     |   |

|       |      |          |                 |  |
|-------|------|----------|-----------------|--|
| IGLK  | -3.5 | AJ408433 | 216401_x_<br>at | Immunoglobulin kappa chain variable region, clone 38 |
| IGHG1 | -3.2 | AI858004 | 213674_x_<br>at | Immunoglobulin heavy constant gamma 1                |
| IGHG1 | -4.8 | BC001872 | 209374_s_<br>at | Immunoglobulin heavy constant gamma 1                |
| IGLK  | -3.1 | M85256   | 211645_x_<br>at | Immunoglobulin kappa light chain                     |

**B. Genes previously associated with malignancy**

|             |      |                     |                        |   |
|-------------|------|---------------------|------------------------|---|
| AKR1B1<br>0 | 3.6  | NM_0202<br>99       | 206561_s_<br>at        | Aldo-keto reductase family 1, member B10 (aldose reductase)     |
| APOD        | -4.1 | NM_0016<br>47       | 201525_at              | Apolipoprotein D  |
| CA2         | 8.3  | M36532              | 209301_at<br>210735_s_ | Carbonic anhydrase II   |
| CA12        | 4.0  | BC000278            | at                     | Carbonic anhydrase XII  |
| CLU         | -7.0 | AI982754            | 222043_at              | Clusterin (complement lysis inhibitor, SP-40, apolipoprotein J) |
| CLU         | -6.9 | M25915              | 208791_at<br>208792_s_ | Clusterin (complement lysis inhibitor, SP-40, apolipoprotein J) |
| CLU         | -5.9 | M25915              | at                     | Clusterin (complement lysis inhibitor, SP-40, apolipoprotein J) |
| CTSL2       | 3.7  | AF070448<br>NM_0003 | 210074_at<br>202284_s_ | Cathepsin L2  |
| CDKN1A      | 3.7  | 89                  | at                     | Cyclin-dependent kinase inhibitor 1A (p21,Cip1)                 |
| DPT         | -6.8 | AI146848            | 213068_at              | Dermatopontin   |
| DPT         | -4.5 | AI146848            | 213071_at              | Dermatopontin   |
| DPT         | -3.0 | NM_0019<br>37       | 207977_s_<br>at        | Dermatopontin   |
| FGFBP1      | 5.3  | NM_0051<br>30       | 205014_at              | Fibroblast growth factor binding protein 1                      |
| FHL1        | -3.7 | NM_0014<br>49       | 201540_at              | Four and a half LIM domains 1                                   |
| FSCN1       | 4.2  | NM_0030<br>88       | 201564_s_<br>at        | Singed (Drosophila)-like (sea urchin fascin homolog like)       |
| GSTA2       | -5.7 | NM_0008<br>46       | 203924_at              | Glutathione S-transferase A2                                    |
| HIF1A       | 3.1  | NM_0015<br>30       | 200989_at              | Hypoxia-inducible factor 1, alpha subunit                       |
| HIG2        | 5.5  | NM_0133<br>32       | 218507_at              | Hypoxia-inducible protein 2                                     |
| HSPA8       | 5.6  | AB03495<br>1        | 210338_s_<br>at        | Heat shock 70kDa protein 8 (also in cancer)                     |
| ID1         | 5.4  | D13889              | 208937_s_<br>at        | Inhibitor of DNA binding 1                                      |

|              |       |                   |                        |  |
|--------------|-------|-------------------|------------------------|--|
| ID2          | 3.0   | NM_0021<br>66     | 201565_s_<br>at        | Inhibitor of DNA binding 2                                 |
| ID2          | 3.1   | NM_0021<br>66     | 201566_x_<br>at        | Inhibitor of DNA binding 2                                 |
| IFI27        | 3.7   | NM_0055<br>32     | 202411_at<br>212143_s_ | Interferon alpha-inducible protein 27 (also in cancer)     |
| IGFBP3       | 3.4   | BF340228          | at                     | Insulin-like growth factor binding protein 3               |
| IGFBP5       | -4.0  | L27560            | 211959_at              | Insulin-like growth factor binding protein 5               |
| KLK12        | 4.5   | NM_0195<br>98     | 220782_x_<br>at        | Kallikrein-related peptidase 12                            |
| KRT6A        | 6.1   | AL569511          | at                     | Keratin 6A   |
| KRT6A        | 5.6   | J00269            | 209125_at<br>209126_x_ | Keratin 6A   |
| KRT6B        | 12.1  | L42612            | at                     | Keratin 6A   |
| KRT6B        | 9.3   | AI831452          | 213680_at              | Keratin 6A   |
| KRT14        | 8.7   | BC002690          | 209351_at              | Keratin 14   |
| KRT16        | 15.7  | AF061812          | 209800_at              | Keratin 16   |
| KRT17        | 5.9   | NM_0004<br>22     | 205157_s_<br>at        | Keratin 17   |
| KRT17        | 4.4   | Z19574<br>NM_0023 | at                     | Keratin 17.  |
| LGALS7       | 7.7   | 07                | 206400_at              | Lectin, galactoside-binding, soluble, 7 (galectin 7)       |
| MUC5A<br>C   | -11.7 | AW19279<br>5      | 214303_x_<br>at        | Mucin 5AC  |
| MUC5A<br>C   | -10.7 | AI521646          | at                     | Mucin 5AC  |
| PERP         | 5.8   | NM_0221<br>21     | 217744_s_<br>at        | TP53 apoptosis effector                                    |
| PGF          | 3.1   | BC001422          | 209652_s_<br>at        | Placental growth factor, VEGF-related protein              |
| PGK1         | 4.5   | S81916            | at                     | Phosphoglycerate kinase 1                                  |
| PKP1         | 5.4   | AI378979          | 221854_at              | Plakophilin 1  |
| PTHLH        | 9.3   | BC005961          | 211756_at              | Parathyroid hormone-like hormone                           |
| PTHLH        | 5.5   | J03580            | 210355_at              | Parathyroid hormone-like hormone                           |
| PTHLH        | 3.4   | NM_0028<br>20     | 206300_s_<br>at        | Parathyroid hormone-like hormone                           |
| SERPINB<br>3 | 4.3   | BC005224          | 209719_x_<br>at        | Serpin Peptidase Inhibitor, clade B (ovalbumin), member 3  |
| SERPINB<br>4 | 3.3   | U19557            | at                     | Serpin Peptidase Inhibitor, clade B (ovalbumin), member 4  |
| SERPINB<br>3 | 4.8   | AB04640<br>0      | 211906_s_<br>at        | Serine proteinase inhibitor, clade B (ovalbumin), member 3 |

|                 |      |                     |                        |  |
|-----------------|------|---------------------|------------------------|--|
| SERPINB<br>13   | 4.1  | AF169949            | 211362_s_<br>at        | Serine proteinase inhibitor, clade B (ovalbumin),<br>member 13 |
| SERPINB<br>13   | 3.9  | AJ001698            | 217272_s_<br>at        | Serine proteinase inhibitor, clade B (ovalbumin),<br>member 13 |
| SERPINB<br>13   | 3.1  | AJ001696            | 211361_s_<br>at        | Serine proteinase inhibitor, clade B (ovalbumin),<br>member 13 |
| SPARCL<br>1     | -3.7 | NM_0046<br>84       | 200795_at              | SPARC-like 1 (mast9, hevin)                                    |
| S100A2          | 3.4  | NM_0059<br>78       | 204268_at              | S100 calcium-binding protein A2                                |
| S100A7          | 8.6  | NM_0071<br>63       | 205916_at<br>206093_x_ | S100 calcium-binding protein A7 (psoriasin 1)                  |
| TNXB            | -3.1 | 16                  | at                     | Tenascin XB  |
| TNXB            | -5.8 | M25813              | 216333_x_<br>at        | Tenascin XB  |
| VEGFA           | 4.8  | AF022375            | 210512_s_<br>at        | Vascular endothelial growth factor                             |
| VEGFA           | 3.0  | H95344              | 212171_x_<br>at        | Vascular endothelial growth factor                             |
| <b>C. Other</b> |      |                     |                        |  |
| TMPRSS<br>11D   | 3.3  | NM_0042<br>62       | 207602_at<br>209546_s_ | Airway trypsin-like protease                                   |
| APOL1           | 5.9  | AF323540<br>NM_0017 | at                     | Apolipoprotein L   |
| DST             | 3.5  | 23                  | 204455_at              | Bullous pemphigoid antigen 1 (Dystonin)                        |
| CLCA2           | 4.4  | NM_0065<br>36       | 206165_s_<br>at        | Chloride channel, calcium activated, family member<br>2        |
| CLCA2           | 3.7  | AF043977<br>NM_0065 | 206166_s_<br>at        | Chloride channel, calcium activated, family member<br>2        |
| CLCA2           | 3.1  | 36                  | 206164_at              | Chloride channel, calcium activated, family member<br>2        |
| COL4A1          | 6.1  | NM_0018<br>45       | 211981_at              | Collagen, type IV, alpha 1                                     |
| COL4A1          | 4.9  | NM_0049<br>45       | 211980_at<br>204751_x_ | Collagen, type IV, alpha 1                                     |
| DSC2            | 3.7  | NM_0019<br>49       | at                     | Desmocollin 2  |
| DSC3            | 3.9  | NM_0019<br>41       | 206033_s_<br>at        | Desmocollin 3  |
| DSG3            | 5.4  | NM_0190<br>44       | 205595_at              | Desmoglein 3   |
| DDIT4           | 3.5  | 58                  | 202887_s_<br>at        | DNA-damage inducible transcript 4                              |

|         |     |          |           |           |  |
|---------|-----|----------|-----------|-----------|--|
| ENOL1   | 7.6 | U88968   | 217294_s_ | at        | Enolase 1, (alpha)                                       |
| FABP5   | 3.1 | NM_0014  | 202345_s_ | at        | Fatty acid binding protein 5 (psoriasis-associated)      |
| FER1L3  | 3.7 | 44       | 211864_s_ | at        | Fer-1-like 3, myoferlin                                  |
| FLG     | 6.5 | AF207990 | 215704_at | at        | filaggrin  |
| GJA1    | 3.4 | AL356504 | NM_0001   | 201667_at | Gap junction protein, alpha 1, 43kD (connexin 43)        |
| IGF2BP3 | 3.2 | 65       | NM_0065   | 203820_s_ | IGF-II mRNA-binding protein 3                            |
| IVL     | 3.2 | 47       | NM_0055   | at        | Involucrin   |
| KLK10   | 4.5 | 47       | 214599_at | 209972_s_ | Kallikrein-related peptidase 10                          |
| LY6D    | 5.6 | BC002710 | NM_0036   | at        | Lymphocyte antigen 6 complex, locus D                    |
| NDUFA4  | 7.1 | 95       | NM_0201   | 206276_at | NADH:ubiquinone oxidoreductase MLRQ subunit              |
| L2      | 7.1 | 42       | NM_0009   | 218484_at | homolog  |
| PLAT    | 3.6 | 30       | NM_0009   | 201860_s_ | Plasminogen activator, tissue                            |
| PPP1R3C | 4.3 | N26005   | NM_0163   | at        | Protein Phosphatase 1, regulatory (inhibitor) subunit 3C |
| RHCG    | 7.0 | 21       | NM_0038   | 204284_at | Rh type C glycoprotein                                   |
| SCEL    | 3.3 | 43       | NM_0031   | 219554_at | Sciellin   |
| SPRR1B  | 5.2 | 25       | NM_0059   | 206884_s_ | Small proline rich protein 1B                            |
| SPRR1A  | 5.3 | 87       | NM_0059   | 214549_x_ | Small proline-rich protein 1A                            |
| SPRR1A  | 4.9 | AI923984 | NM_0069   | at        | Small proline-rich protein 1A                            |
| SPRR2D  | 6.5 | 45       | NM_0065   | 213796_at | Small proline-rich protein 2B                            |
| SPRR2C  | 4.5 | 18       | NM_0065   | 208539_x_ | Small proline-rich protein 2C                            |
| SQLE    | 3.5 | AF098865 | NM_0032   | at        | Squalene Epoxidase                                       |
| SCD     | 4.1 | 1        | NM_0003   | 200832_s_ | Stearoyl-CoA desaturase (delta-9-desaturase)             |
| TGM1    | 5.6 | 59       | NM_0032   | at        | Transglutaminase 1                                       |
| TGM3    | 6.4 | 45       | NM_0042   | 206008_at | Transglutaminase 3                                       |
| TMPRSS  | 4.6 | 62       | NM_0140   | 206004_at | Transmembrane Protease Serine 11D                        |
| 11D     | 5.0 | 62       | NM_0140   | 207602_at | Transmembrane Protease Serine 11E                        |
| TMPRSS  | 5.0 | 62       | NM_0140   | 220431_at | Transmembrane Protease Serine 11E                        |

|          |       |          |           |   |
|----------|-------|----------|-----------|---|
| 11E      |       | 58       |           |   |
| ADH1C    | -7.8  | NM_0006  | 206262_at | Alcohol dehydrogenase 1C (class I), gamma polypeptide |
| ALDH3A1  | -7.6  | NM_0006  | 205623_at | Aldehyde dehydrogenase 3 family, member A1            |
| CES1     | -11.8 | S73751   | 209616_s_ |   |
| C1S      | -3.5  | M18767   | at        | Carboxylesterase 1                                    |
| CKAP2    | -5.8  | D84143   | 208747_s_ |   |
| CFD      | -3.5  | NM_0019  | at        | Complement component 1, s subcomponent                |
| DCN      | -3.3  | AI281593 | 216984_x_ |   |
| GNG11    | -4.4  | NM_0041  | at        | Cytoskeleton associated protein 2                     |
| HSD17B11 | -3.1  | 28       | 205382_s_ |   |
| LEPR     | -6.1  | AI281593 | at        | D component of complement (adipsin)                   |
| PTGDS    | -5.8  | NM_0009  | 209335_at | Decorin   |
| PTGDS    | -4.6  | 26       | 204115_at | Guanine nucleotide binding protein 11                 |
| SRPX     | -3.4  | NM_0162  | 217989_at | Hydroxysteroid (17 beta) dehydrogenase 11             |
| CLEC3B   | -11.9 | U50748   | 209894_at | Leptin receptor                                       |
| TGFBR3   | -3.9  | NM_0009  | 212187_x_ |   |
| FAM107A  | -9.4  | 54       | at        | Prostaglandin D2 synthase (21kD, brain)               |
| Unknown  | -6.7  | BC005939 | 211748_x_ |   |
|          |       | NM_0063  | at        | Prostaglandin D2 synthase (21kD, brain)               |
|          |       | 07       | 204955_at | Sushi-repeat-containing protein, X chromosome         |
|          |       | NM_0032  |           |   |
|          |       | 78       | 205200_at | Tetranectin   |
|          |       | NM_0032  |           |   |
|          |       | 43       | 204731_at | Transforming growth factor, beta receptor III         |
|          |       | AL050264 | 209074_s_ |   |
|          |       | AV71190  | at        | TU3A protein  |
|          |       | 4        | 213975_s_ |   |
|          |       |          | at        | Unknown   |