

| Clone ID | P-value | Dog chromosome location | Human chromosome location | Association | Gene Symbol | Gene Description | Human cytogenetic assignment (Entrez) |
|-------------|----------|-------------------------|---------------------------|-------------|--|---|---|
| CH82-325C12 | 2.90E-15 | chr11:44256300-44428212 | chr9:21971498-22175227 | ↓ loss in T | CDKN2A CDKN2BAS CDKN2B | cyclin-dependent kinase inhibitor 2A (melanoma, p16, inhibits CDK4) CDKN2B antisense RNA (non-protein coding) cyclin-dependent kinase inhibitor 2B (p15, inhibits CDK4) | 9p21 9p21.3 9p21 |
| CH82-518M17 | 2.59E-14 | chr26:30333217-30501573 | chr22:23040362-23163490 | ↓ loss in B | IGL@ | immunoglobulin lambda locus | 22q11.1-q11.2 |
| CH82-335B12 | 6.32E-12 | chr7:47644466-47863226 | chr18:43975514-44231745 | ↑ gain in T | RNF165 LOXHD1 | ring finger protein 165 lipoxigenase homology domains 1 | 18q21.1 18q21.1 |
| CH82-328B22 | 1.29E-11 | chr11:44781889-44967263 | chr9:22685716-22964798 | ↓ loss in T | | | |
| CH82-326D17 | 6.15E-10 | chr11:59214619-59407273 | chr9:101883496-102109561 | ↓ loss in T | TGFBR1 ALG2 SEC61B | transforming growth factor, beta receptor 1 asparagine-linked glycosylation 2, alpha-1,3-mannosyltransferase homolog (S. cerevisiae) Sec61 beta subunit | 9q22 9q22.33 9q22.32-q31.3 |
| CH82-182K13 | 8.27E-10 | chr11:46963358-47162842 | chr9:25449357-25692162 | ↓ loss in T | TUSC1 | tumor suppressor candidate 1 | 9p21.2 |
| CH82-323B19 | 9.15E-10 | chr11:62701940-62877297 | chr9:106356737-106560456 | ↓ loss in T | | | |
| CH82-326L03 | 9.15E-10 | chr29:17828601-18018126 | chr8:65965857-66202007 | ↑ gain in T | | | |
| CH82-62K23 | 9.59E-10 | chr29:39904804-40101226 | chr8:92644487-92917555 | ↑ gain in T | | | |
| CH82-186K24 | 1.35E-09 | chr29:11056424-11217103 | chr8:57708443-57903235 | ↑ gain in T | | | |
| CH82-122K09 | 1.58E-09 | chr11:68337530-68496985 | chr9:113126851-113312950 | ↓ loss in T | IMPAD1 SVEP1 | inositol monophosphatase domain containing 1 sushi, von Willebrand factor type A, EGF and pentraxin domain containing 1 | 8q12.1 9q32 |
| CH82-188F09 | 1.60E-09 | chr11:64316141-64518503 | chr9:108175680-108433951 | ↓ loss in T | FSD1L FKTN TAL2 | fibronectin type III and SPRY domain containing 1-like fukutin T-cell acute lymphocytic leukemia 2 | 9q31 9q31-q33 9q32 |
| CH82-476B13 | 2.18E-09 | chr11:53941124-54164296 | chr9:34170175-34447457 | ↓ loss in T | UBAP1 KIF24 NUDT2 KIAA1161 C9orf24 C9orf25 DCAF12 TMEM215 | ubiquitin associated protein 1 kinesin family member 24 nudix (nucleoside diphosphate linked moiety X)-type motif 2 KIAA1161 chromosome 9 open reading frame 24 chromosome 9 open reading frame 25 DDB1 and CUL4 associated factor 12 transmembrane protein 215 | 9p13.3 9p13.3 9p13 9p13.3 9p13.3 9p13.3 9p13.3 9p21.1 |
| CH82-330P17 | 5.02E-09 | chr11:52968262-53138987 | chr9:32726585-32970532 | ↓ loss in T | TEX10 C9orf30 TMEFF1 | testis expressed 10 chromosome 9 open reading frame 30 transmembrane protein with EGF-like and two follistatin-like domains 1 | 9q31.1 9q31.1 9q31 |
| CH82-182N23 | 5.02E-09 | chr11:60273100-60424472 | chr9:103101979-103260787 | ↓ loss in T | C9orf5 MIR32 C9orf4 | chromosome 9 open reading frame 5 microRNA 32 chromosome 9 open reading frame 4 | 9q31 9q31.3 9q31 |
| CH82-283G14 | 8.13E-09 | chr11:67213701-67408065 | chr9:111799260-112018268 | ↓ loss in T | C9orf4 EPB41L4B | chromosome 9 open reading frame 4 erythrocyte membrane protein band 4.1 like 4B | 9q31 9q31-q32 |
| CH82-283N18 | 8.61E-09 | chr11:66075523-66263523 | chr9:110459184-110716227 | ↓ loss in T | | | |
| CH82-126F14 | 9.43E-09 | chr29:16100252-16297400 | chr8:63866886-64142271 | ↑ gain in T | NKAIN3 GGH TTPA YTHDF3 | Na+/K+ transporting ATPase interacting 3 gamma-glutamyl hydrolase (conjugase, folylpolyglutamyl hydrolase) tocopherol (alpha) transfer protein YTH domain family, member 3 | 8q12.3 8q12.3 8q13.1-q13.3 8q12.3 |
| CH82-330F20 | 9.43E-09 | chr29:31039105-31239831 | chr8:81707127-81914953 | ↑ gain in T | ZNF704 PAG1 | zinc finger protein 704 phosphoprotein associated with glycosphingolipid microdomains 1 | 8q21.13 8q21.13 |
| CH82-227C15 | 9.43E-09 | chrX:5971142-6187626 | chrX:9201065-9443981 | ↓ loss in T | TBL1X | transducin (beta)-like 1X-linked | Xp22.3 |
| CH82-307I24 | 1.23E-08 | chr11:49854198-50041767 | chr9:28867679-29097017 | ↓ loss in T | MIR873 | microRNA 873 | 9p21.1 |
| CH82-186L04 | 1.29E-08 | chr29:12919188-13097576 | chr8:60099048-60288616 | ↑ gain in T | | | |
| CH82-484E08 | 1.29E-08 | chr29:30017710-30207186 | chr8:80452986-80701280 | ↑ gain in T | STMN2 HEY1 | stathmin-like 2 hairy/enhancer-of-split related with YRPW motif 1 | 8q21.13 8q21 |
| CH82-335J10 | 1.40E-08 | chr27:29995092-30168051 | chr12:20216116-20414056 | ↓ loss in T | | | |
| CH82-326C11 | 1.59E-08 | chr17:30440924-30645197 | chr2:34748964-34984973 | ↓ loss in T | | | |
| CH82-474I11 | 1.74E-08 | chr11:56633361-56824997 | chr9:37274866-37489328 | ↓ loss in T | ZCCHC7 GRHPR ZBTB5 POLR1E | zinc finger, CCHC domain containing 7 glyoxylate reductase/hydroxypyruvate reductase zinc finger and BTB domain containing 5 polymerase (RNA) I polypeptide E, 53kDa | 9p13.2 9q12 9p13.2 9p13.2 |
| CH82-283A15 | 2.16E-08 | chr11:53688814-53860277 | chr9:33901142-34070014 | ↓ loss in T | UBE2R2 UBAP2 SNORD121B SNORD121A | ubiquitin-conjugating enzyme E2R 2 ubiquitin associated protein 2 small nucleolar RNA, C/D box 121B small nucleolar RNA, C/D box 121A | 9p13.3 9p13.3 9p13.3 9p13.3 |
| CH82-188B08 | 2.67E-08 | chr36:19726329-19893588 | chr2:173217252-173413578 | ↑ gain in T | ITGA6 | integrin, alpha 6 | 2q31.1 |
| CH82-335I16 | 2.72E-08 | chrX:36738805-36947667 | chrX:42405051-42662210 | ↓ loss in T | PPP1R2P9 KIAA1958 C9orf80 | protein phosphatase 1, regulatory (inhibitor) subunit 2 pseudogene 9 KIAA1958 chromosome 9 open reading frame 80 | Xp11.4-p11.3 9q32 9q32 |
| CH82-191N23 | 3.02E-08 | chr11:70086781-70269451 | chr9:115361670-115573042 | ↓ loss in T | SNX30 | sorting nexin family member 30 | 9q32 |
| CH82-326L05 | 3.13E-08 | chr11:20496756-20706739 | chr5:127808121-128047915 | ↓ loss in T | FBN2 RUSC2 FAM166B TESK1 CD72 | fibrillin 2 RUN and SH3 domain containing 2 family with sequence similarity 166, member B testis-specific kinase 1 CD72 molecule | 5q23-q31 9p13.3 9p13.3 9p13 9p13.3 |
| CH82-330N18 | 3.56E-08 | chr11:55104897-55322407 | chr9:35491138-35673995 | ↓ loss in T | STT1 RMRP CCDC107 C9orf100 CA9 TPM2 TLN1 CREB3 | signaling threshold regulating transmembrane adaptor 1 RNA component of mitochondrial RNA processing endoribonuclease coiled-coil domain containing 107 chromosome 9 open reading frame 100 carbonic anhydrase IX tropomyosin 2 (beta) talin 1 cAMP responsive element binding protein 3 | 9p13-p12 9p21-p12 9p13.3 9p13.3 9p13-p12 9p13.2-p13.1 9p13 9pter-p22.1 |

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|-------------|----------|-------------------------|---------------------------|-------------|----------------------|---|---------------------------------------|
| | | | | | <i>GBA2</i> | glucosidase, beta (bile acid) 2 | 9p13.3 |
| | | | | | <i>RGP1</i> | RGP1 retrograde golgi transport homolog (<i>S. cerevisiae</i>) | 9pter-p22.1 |
| | | | | | <i>MSMP</i> | microseminoprotein, prostate associated | 9p13.3 |
| CH82-326D12 | 3.68E-08 | chr38:23819476-24017707 | chr1:161628277-161826899 | ↓ loss in T | <i>FCGR2B</i> | Fc fragment of IgG, low affinity IIb, receptor (CD32) | 1q23 |
| | | | | | <i>RPL31P1</i> | ribosomal protein L31 pseudogene 11 | 1q23.3 |
| | | | | | <i>FCRLA</i> | Fc receptor-like A | 1q23.3 |
| | | | | | <i>FCRLB</i> | Fc receptor-like B | 1q23.3 |
| | | | | | <i>DUSP12</i> | dual specificity phosphatase 12 | 1q21-q22 |
| | | | | | <i>ATF6</i> | activating transcription factor 6 | 1q22-q23 |
| CH82-195D13 | 4.24E-08 | chr11:74425345-74603505 | chr9:120503594-120695547 | ↓ loss in T | | | |
| CH82-326O21 | 4.30E-08 | chr11:70854059-71039141 | chr9:116252635-116460224 | ↓ loss in T | <i>RGS3</i> | regulator of G-protein signaling 3 | 9q32 |
| CH82-335L09 | 4.54E-08 | chr33:3201681-3387833 | chr3:88421711-88660390 | ↑ gain in T | | | |
| CH82-79I21 | 4.82E-08 | chr11:54029173-54260358 | chr9:34279191-34554509 | ↓ loss in T | <i>DNAI1</i> | dynein, axonemal, intermediate chain 1 | 9p21-p13 |
| | | | | | <i>ENHO</i> | energy homeostasis associated | 9p13.3 |
| | | | | | <i>CNTRF</i> | ciliary neurotrophic factor receptor | 9p13 |
| CH82-312I02 | 4.99E-08 | chr29:13618057-13802817 | chr8:61009411-61243838 | ↑ gain in T | <i>CAB</i> | carbonic anhydrase VIII | 8q11-q12 |
| CH82-335O03 | 5.09E-08 | chr13:44317860-44495975 | chr4:44934837-45176721 | ↓ loss in T | | | |
| CH82-183C10 | 5.29E-08 | chr38:25708246-25926765 | chr1:158901640-159265610 | ↓ loss in T | <i>PYHIN1</i> | pyrin and HIN domain family, member 1 | 1q23.1 |
| | | | | | <i>IFI16</i> | interferon, gamma-inducible protein 16 | 1q22 |
| | | | | | <i>AIM2</i> | absent in melanoma 2 | 1q22 |
| | | | | | <i>CADM3</i> | cell adhesion molecule 3 | 1q21.2-q22 |
| | | | | | <i>DARC</i> | Duffy blood group, chemokine receptor | 1q21-q22 |
| CH82-323E02 | 5.84E-08 | chr29:42277116-42468869 | chr8:95602167-95836968 | ↑ gain in T | <i>FCER1A</i> | Fc fragment of IgE, high affinity 1, receptor for; alpha polypeptide | 1q23 |
| | | | | | <i>LOC100288748</i> | hypothetical protein LOC100288748 | 8q22.1 |
| | | | | | <i>ESRP1</i> | epithelial splicing regulatory protein 1 | 8q22.1 |
| | | | | | <i>DPY19L4</i> | dpy-19-like 4 (<i>C. elegans</i>) | 8q22.1 |
| | | | | | <i>INTS8</i> | integrator complex subunit 8 | 8q22.1 |
| CH82-122C24 | 6.68E-08 | chr6:27299071-27480266 | chr16:20919993-21162553 | ↑ gain in T | <i>LYRM1</i> | LYR motif containing 1 | 16p11.2 |
| | | | | | <i>DNAH3</i> | dynein, axonemal, heavy chain 3 | 16p12.3 |
| CH82-328D10 | 7.96E-08 | chr38:25164962-25365710 | chr1:159744164-159996169 | ↓ loss in T | <i>DUSP23</i> | dual specificity phosphatase 23 | 1q23.2 |
| | | | | | <i>FCRL6</i> | Fc receptor-like 6 | 1q23.2 |
| | | | | | <i>SLAMF8</i> | SLAM family member 8 | 1q23.2 |
| | | | | | <i>C1orf204</i> | chromosome 1 open reading frame 204 | 1q23.2 |
| | | | | | <i>VSIG8</i> | V-set and immunoglobulin domain containing 8 | 1q23.2 |
| | | | | | <i>CCDC19</i> | coiled-coil domain containing 19 | 1q22 |
| | | | | | <i>TAGLN2</i> | transgelin 2 | 1q21-q25 |
| | | | | | <i>IGSF9</i> | immunoglobulin superfamily, member 9 | 1q22-q23 |
| | | | | | <i>SLAMF9</i> | SLAM family member 9 | 1q23.2 |
| CH82-188A22 | 1.38E-07 | chr11:47987266-48173381 | chr9:26695197-26928914 | ↓ loss in T | <i>C9orf82</i> | chromosome 9 open reading frame 82 | 9p21.2 |
| | | | | | <i>PLAA</i> | phospholipase A2-activating protein | 9p21 |
| CH82-465J12 | 1.48E-07 | chr20:27883696-28077793 | chr3:66381821-66599802 | ↑ gain in T | <i>SLC25A26</i> | solute carrier family 25, member 26 | 3p14.1 |
| CH82-335K09 | 1.71E-07 | chr10:44476493-44645214 | chr2:102013119-102212353 | ↓ loss in T | <i>LRIG1</i> | leucine-rich repeats and immunoglobulin-like domains 1 | 3p14 |
| | | | | | <i>RFX8</i> | regulatory factor X, 8 | 2q11.2 |
| CH82-43N06 | 1.71E-07 | chr20:30069827-30263576 | chr3:63946970-64149074 | ↑ gain in T | <i>ATXN7</i> | ataxin 7 | 3p21.1-p12 |
| | | | | | <i>PSMD6</i> | proteasome (prosome, macropain) 26S subunit, non-ATPase, 6 | 3p14.1 |
| | | | | | <i>LOC100287879</i> | hypothetical protein LOC100287879 | 3p14.1 |
| | | | | | <i>PRICKLE2</i> | prickle homolog 2 (<i>Drosophila</i>) | 3p14.1 |
| CH82-323L01 | 1.98E-07 | chr11:73128843-73335733 | chr9:119038458-119256051 | ↓ loss in T | <i>PAPPA</i> | pregnancy-associated plasma protein A, pappalysin 1 | 9q33.2 |
| | | | | | <i>ASTN2</i> | astrotactin 2 | 9q33.1 |
| CH82-126A11 | 2.19E-07 | chr11:36523749-36739999 | chr9:12876195-13130779 | ↓ loss in T | <i>MPDZ</i> | multiple PDZ domain protein | 9p24-p22 |
| CH82-325D10 | 2.22E-07 | chr29:26683636-26913366 | chr8:76323204-76638495 | ↑ gain in T | <i>HNF4G</i> | hepatocyte nuclear factor 4, gamma | 8q21.11 |
| CH82-106A14 | 2.42E-07 | chr11:65115892-65304070 | chr9:109221085-109476991 | ↓ loss in T | | | |
| CH82-326L11 | 2.63E-07 | chr11:15894670-16095447 | chr5:122366512-122560138 | ↓ loss in T | <i>PP1C</i> | peptidylprolyl isomerase C (cyclophilin C) | 5q23.2 |
| CH82-126B05 | 2.73E-07 | chr11:11844896-12035590 | nd | ↓ loss in T | <i>PRDM6</i> | PR domain containing 6 | 5q23.2 |
| CH82-335F20 | 2.73E-07 | chr33:7218463-7406125 | chr3:96851744-97081923 | ↓ loss in T | <i>EPHA6</i> | EPH receptor A6 | 3q11.2 |
| CH82-307H04 | 2.76E-07 | chr11:75956107-76142514 | chr9:122290137-122507523 | ↓ loss in T | | | |
| CH82-311I23 | 2.87E-07 | chr6:18737657-18940686 | chr7:991387-1198121 | ↑ gain in T | <i>ADAP1</i> | ArfGAP with dual PH domains 1 | 7p22.3 |
| | | | | | <i>COX19</i> | COX19 cytochrome c oxidase assembly homolog (<i>S. cerevisiae</i>) | 7p22.3 |
| | | | | | <i>CYP2W1</i> | cytochrome P450, family 2, subfamily W, polypeptide 1 | 7p22.3 |
| | | | | | <i>C7orf50</i> | chromosome 7 open reading frame 50 | 7p22.3 |
| | | | | | <i>MIR339</i> | microRNA 339 | 7p22.3 |
| | | | | | <i>GPR146</i> | G protein-coupled receptor 146 | 7p22.3 |
| | | | | | <i>GPER</i> | G protein-coupled estrogen receptor 1 | 7p22.3 |
| | | | | | <i>ZFAND2A</i> | zinc finger, AN1-type domain 2A | 7p22.3 |
| CH82-205N21 | 2.88E-07 | chr36:20959683-21140453 | chr2:174667906-174874306 | ↑ gain in T | <i>SP3</i> | Sp3 transcription factor | 2q31 |
| CH82-188H11 | 3.45E-07 | chr11:29760129-29985064 | nd | ↓ loss in T | | | |
| CH82-325L14 | 3.54E-07 | chr11:76880486-77092536 | chr9:123558300-123824031 | ↓ loss in T | <i>LOC100288842</i> | similar to Putative UDP-GlcNAc:betaGal beta-1,3-N-acetylglucosaminyltransferase ENSP00000381720 | 9q33.2 |
| | | | | | <i>PSMD5</i> | proteasome (prosome, macropain) 26S subunit, non-ATPase, 5 | 9q33.2 |
| | | | | | <i>LOC253039</i> | hypothetical LOC253039 | 9q33.2 |
| | | | | | <i>PHF19</i> | PHD finger protein 19 | 9q33.2 |
| | | | | | <i>TRAF1</i> | TNF receptor-associated factor 1 | 9q33-q34 |
| | | | | | <i>C5</i> | complement component 5 | 9q33-q34 |
| CH82-326I23 | 3.67E-07 | chr20:22512735-22690487 | chr8:71284807-71516424 | ↑ gain in T | <i>NCOA2</i> | nuclear receptor coactivator 2 | 8q13.3 |

| Clone ID | P-value | Dog chromosome location | Human chromosome location | Association | Gene Symbol | Gene Description | Human cytogenetic assignment (Entrez) |
|-------------|----------|-------------------------|---------------------------|--------------------------|--|--|---|
| CH82-32022 | 3.07E-07 | chr29:22913733-22939467 | chr9:1264607-12650424 | ↑ gain in T | <i>TRAM1</i> | translocation associated membrane protein 1 | 8q13.3 |
| CH82-335P22 | 4.12E-07 | chrX:85500216-85667178 | chrX:108277972-108556760 | ↑ gain in T | | | |
| CH82-388J08 | 5.44E-07 | chr11:57981148-58178226 | chr9:100407817-100620444 | ↓ loss in T | <i>NCBP1</i> <i>XPA</i> | nuclear cap binding protein subunit 1, 80kDa xeroderma pigmentosum, complementation group A | 9q34.1 9q22.3 |
| CH82-186P04 | 5.48E-07 | chr11:27687472-27890432 | chr5:136241666-136455973 | ↓ loss in T | <i>FOXE1</i> <i>SPOCK1</i> | forkhead box E1 (thyroid transcription factor 2) sparc/osteonectin, cwcv and kazal-like domains proteoglycan (testican) 1 | 9q22 5q31 |
| CH82-283I16 | 5.48E-07 | chr17:16182339-16366149 | chr2:17941094-18217316 | ↓ loss in T | <i>GEN1</i> <i>MSGN1</i> <i>KCNJ3</i> <i>CSPG5</i> <i>SMARCC1</i> | Gen homolog 1, endonuclease (Drosophila) mesogenin 1 potassium voltage-gated channel, delayed-rectifier, subfamily S, member 3 chondroitin sulfate proteoglycan 5 (neuroglycan C) SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily c, member 1 | 2p24.2 2p24.2 2p24 3p21.3 3p23-p21 |
| CH82-199P08 | 5.50E-07 | chr20:44212695-44392773 | chr3:47562257-47764195 | ↑ gain in T | | | |
| CH82-335B14 | 6.38E-07 | chr15:50607472-50807713 | chr4:150399954-150629180 | ↓ loss in T | | | |
| CH82-323J05 | 6.74E-07 | chr11:16821154-17005420 | chr5:123368897-123608330 | ↓ loss in T | | | |
| CH82-62D11 | 6.74E-07 | chr11:19493280-19727771 | chr5:126708683-126964715 | ↓ loss in T | <i>MEGF10</i> <i>PRRC1</i> | multiple EGF-like-domains 10 proline-rich coiled-coil 1 | 5q33 |
| CH82-126L20 | 6.92E-07 | chr3:41442419-41673900 | chr15:29572544-29812637 | ↑ gain in B/ ↑ loss in T | <i>FAM189A1</i> | family with sequence similarity 189, member A1 | 15q13.1 |
| CH82-328H09 | 8.06E-07 | chr29:25727982-25904378 | chr8:75174568-75393390 | ↑ gain in T | <i>JPH1</i> <i>GDAP1</i> | junctionophilin 1 ganglioside-induced differentiation-associated protein 1 | 8q21 8q21.11 |
| CH82-283M14 | 8.34E-07 | chr11:17730891-17930078 | chr5:124465395-124713824 | ↓ loss in T | <i>MYOT</i> | myotilin | 5q31 |
| CH82-126B13 | 8.62E-07 | chr11:28542575-28755793 | chr5:137155789-137413182 | ↓ loss in T | <i>PKD2L2</i> <i>FAM13B</i> | polycystic kidney disease 2-like 2 family with sequence similarity 13, member B | 5q31 5q31 |
| CH82-191F04 | 8.62E-07 | chr17:15316830-15469466 | chr2:16881566-17111647 | ↓ loss in T | | | |
| CH82-323K08 | 8.77E-07 | chr29:14622563-14833432 | chr8:62175093-62433769 | ↑ gain in T | <i>CLVS1</i> <i>ASPH</i> | clavesin 1 aspartate beta-hydroxylase | 8q12.3 8q12.1 |
| CH82-122L07 | 9.83E-07 | chr11:9362920-9542518 | chr5:116030581-116235057 | ↓ loss in T | | | |
| CH82-465G11 | 9.83E-07 | chr11:26672686-26878843 | chr5:134976198-135285012 | ↓ loss in T | <i>LOC340074</i> <i>IL9</i> <i>FBXL21</i> <i>LECT2</i> | hypothetical LOC340074 interleukin 9 F-box and leucine-rich repeat protein 21 (gene/pseudo gene) leukocyte cell-derived chemotaxin 2 | 5q31.1 5q31.1 5q31 5q31.1-q32 |
| CH82-323H01 | 1.05E-06 | chr6:28940939-29133680 | chr16:19079114-19327301 | ↑ gain in T | <i>COQ7</i> <i>ITPR1PL2</i> <i>SYT17</i> <i>LOC728276</i> | coenzyme Q7 homolog, ubiquinone (yeast) inositol 1,4,5-triphosphate receptor interacting protein-like 2 synaptotagmin XVII hypothetical LOC728276 | 16p13.1-p12.3 16p12.3 16p12.3 16p12.3 |
| CH82-122F19 | 1.05E-06 | chrX:1651879-1665994 | chrX:3134685-3156819 | ↑ gain in T | | | |
| CH82-126F15 | 1.14E-06 | chr29:21252970-21460451 | chr8:69786666-70031231 | ↑ gain in T | | | |
| CH82-283L06 | 1.27E-06 | chr38:22474724-22638988 | chr1:163228114-163431132 | ↓ loss in T | | | |
| CH82-126B11 | 1.35E-06 | chr19:19825129-20052640 | chr4:124246232-124507605 | ↑ gain in T | <i>NUF2</i> | NUF2, NDC80 kinetochore complex component, homolog (S. cerevisiae) | 1q23.3 |
| CH82-362P01 | 1.39E-06 | chr36:18365962-18563705 | chr2:171671651-171868093 | ↑ gain in T | <i>SPRY1</i> <i>GAD1</i> <i>GORASP2</i> <i>TLK1</i> | sprouty homolog 1, antagonist of FGF signaling (Drosophila) glutamate decarboxylase 1 (brain, 67kDa) golgi reassembly stacking protein 2, 55kDa tousled-like kinase 1 | 4q28.1 2q31 2q31.1-q31.2 2q31.1 |
| CH82-335J09 | 1.43E-06 | chr33:26526576-26712986 | chr3:119581409-119816945 | ↓ loss in T | <i>GSK3B</i> | glycogen synthase kinase 3 beta | 3q13.3 |
| CH82-326A13 | 1.58E-06 | chr11:61849471-62044977 | chr9:105043328-105347967 | ↑ loss in T | | | |
| CH82-126L23 | 1.69E-06 | chr6:47416907-47581966 | chr1:107553676-107732705 | ↑ gain in T | <i>PRMT6</i> <i>NTNG1</i> <i>MYO1C</i> | protein arginine methyltransferase 6 netrin G1 myosin IC | 1p13.3 1p13.3 17p13 |
| CH82-43805 | 1.74E-06 | chr9:48965695-49169481 | chr17:1374865-1607726 | ↑ gain in T | <i>INPP5K</i> <i>PITPNA</i> <i>SLC43A2</i> <i>SCARF1</i> <i>RILP</i> <i>PRPF8</i> <i>TLCD2</i> | inositol polyphosphate-5-phosphatase K phosphatidylinositol transfer protein, alpha solute carrier family 43, member 2 scavenger receptor class F, member 1 Rab interacting lysosomal protein PRPF8 pre-mRNA processing factor 8 homolog (S. cerevisiae) TLC domain containing 2 | 17p13.3 17p13.3 17p13.3 17p13.3 17p13.3 17p13.3 17p13.3 |
| CH82-307H01 | 2.01E-06 | chr17:20383332-20583261 | chr2:22981692-232115059 | ↓ loss in T | | | |
| CH82-335J12 | 2.16E-06 | chr4:91104162-91270051 | chr5:14988134-15230669 | ↓ loss in T | | | |
| CH82-328A15 | 2.64E-06 | chr11:12876081-13075538 | chr5:119836983-120081168 | ↓ loss in T | <i>PRR16</i> | proline rich 16 | 5q23.1 |
| CH82-122K20 | 2.72E-06 | chr17:28982145-29182179 | chr2:32881557-33110541 | ↓ loss in T | <i>TTC27</i> <i>LOC285045</i> | tetratricopeptide repeat domain 27 hypothetical LOC285045 | 2p22.3 2p22.3 |
| CH82-326G17 | 2.80E-06 | chr17:22039335-22258253 | chr2:24919881-25185699 | ↓ loss in T | <i>NCOA1</i> <i>C2orf79</i> <i>CENPO</i> <i>ADCY3</i> <i>DNAJC27</i> | nuclear receptor coactivator 1 chromosome 2 open reading frame 79 centromere protein O adenylate cyclase 3 DnaJ (Hsp40) homolog, subfamily C, member 27 | 2p23 2p23.3 2p23.3 2p23.3 2p23.3 |
| CH82-122K05 | 3.38E-06 | chr38:16048359-16219112 | chr1:218059518-218276635 | ↓ loss in T | <i>C2orf39</i> <i>OTOF</i> <i>C2orf70</i> | chromosome 2 open reading frame 39 otoferlin chromosome 2 open reading frame 70 | 2p23.3 2p23.1 2p23.3 |
| CH82-188J16 | 3.45E-06 | chr17:23478945-23689925 | chr2:26655053-26890338 | ↓ loss in T | <i>CLB4</i> <i>SLC25A20</i> <i>C3orf71</i> <i>ARIH2</i> <i>P4HTM</i> <i>WDR6</i> <i>DALRD3</i> | calcium and integrin binding family member 4 solute carrier family 25 (carnitine/acylcarnitine translocase), member 20 chromosome 3 open reading frame 71 ariadne homolog 2 (Drosophila) prolyl 4-hydroxylase, transmembrane (endoplasmic reticulum) WD repeat domain 6 DALR anticodon binding domain containing 3 | 2p23.3 3p21.31 3p21.31 3p21.2-p21.3 3p21.31 3p21.31 3p21.31 |

| Clone ID | P-value | Dog chromosome location | Human chromosome location | Association | Gene Symbol | Gene Description | Human cytogenetic assignment (Entrez) |
|---------------|-------------------------------------|-------------------------|---------------------------|-------------|------------------|--|---------------------------------------|
| CH82-332L12 | 3.92E-06 | chr20:43028069-43253372 | chr3:48922261-49207828 | ↑ gain in T | <i>MIR425</i> | microRNA 425 | 3p21.31 |
| | | | | | <i>NDUFAF3</i> | NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, assembly factor 3 | 3p21.31 |
| | | | | | <i>MIR191</i> | microRNA 191 | 3p21.31 |
| | | | | | <i>IMPDH2</i> | IMP (inosine monophosphate) dehydrogenase 2 | 3p21.2 |
| | | | | | <i>QRICH1</i> | glutamine-rich 1 | 3p21.31 |
| | | | | | <i>QARS</i> | glutamyl-tRNA synthetase | 3p21.3-p21.1 |
| | | | | | <i>USP19</i> | ubiquitin specific peptidase 19 | 3p21.31 |
| | | | | | <i>LAMB2</i> | laminin, beta 2 (laminin 5) | 3p21 |
| | | | | | <i>LAMB2L</i> | laminin, beta 2-like | 3p21.3-p21.2 |
| | | | | | <i>CCDC71</i> | coiled-coil domain containing 71 | 3p21.31 |
| CH82-287K01 | 4.24E-06 | chr36:10383239-10579479 | chr2:162822527-163020917 | ↑ gain in T | <i>SLC4A10</i> | solute carrier family 4, sodium bicarbonate transporter, member 10 | 2q23-q24 |
| | | | | | <i>DPP4</i> | dipeptidyl-peptidase 4 | 2q24.3 |
| | | | | | <i>GCG</i> | glucagon | 2q36-q37 |
| CH82-330A20 | 4.40E-06 | chr11:24341825-24533759 | chr5:132409181-132598887 | ↑ loss in T | <i>HSPA4</i> | heat shock 70kDa protein 4 | 5q31.1-q31.2 |
| | | | | | <i>FSTL4</i> | folliculin-like 4 | 5q31.1 |
| CH82-330C22 | 4.62E-06 | chr20:34378206-34586424 | chr3:59140056-59399519 | ↑ gain in T | | | |
| CH82-283O13 | 4.62E-06 | chr20:38803526-38998514 | chr3:54069992-54289308 | ↑ gain in T | | | |
| CH82-197E07 | 4.64E-06 | chr26:16599392-16783033 | chr12:117407679-117614137 | ↑ gain in T | <i>CACNA2D3</i> | calcium channel, voltage-dependent, alpha 2/delta subunit 3 | 3p21.1 |
| | | | | | <i>FBXW8</i> | F-box and WD repeat domain containing 8 | 12q24.21tdb9938 |
| CH82-126F23 | 4.91E-06 | chr20:11244176-11434550 | chr3:9861444-10142042 | ↑ gain in T | <i>TESC</i> | tescalcin | 12q24.22 |
| | | | | | <i>FBXO21</i> | F-box protein 21 | 12q24.22 |
| | | | | | <i>TTL3</i> | tubulin tyrosine ligase-like family, member 3 | 3p25.3 |
| | | | | | <i>RPUSD3</i> | RNA pseudouridylylase domain containing 3 | 3p25.3 |
| | | | | | <i>CIDEA</i> | cell death-inducing DFFA-like effector c | 3p25.3 |
| | | | | | <i>JAGN1</i> | Jaqual homolog 1 (Drosophila) | 3p25.2 |
| | | | | | <i>IL17RE</i> | interleukin 17 receptor E | 3p25.3 |
| | | | | | <i>IL17RC</i> | interleukin 17 receptor C | 3p25.3 3p25.3-p24.1 |
| | | | | | <i>CRELD1</i> | cysteine-rich with EGF-like domains 1 | 3p25.3 |
| | | | | | <i>PRRT3</i> | proline-rich transmembrane protein 3 | 3p25.3 |
| | | | | | <i>TMEM111</i> | transmembrane protein 111 | 3p25.3 |
| | | | | | <i>LOC401052</i> | hypothetical LOC401052 | 3p25.3 |
| | | | | | <i>CIDECP</i> | cell death-inducing DFFA-like effector c pseudogene | 3p25.3 |
| | | | | | <i>FANCD2</i> | Fanconi anemia, complementation group D2 | 3p26 |
| | | | | | <i>C3orf24</i> | chromosome 3 open reading frame 24 | 3p25.3 |
| CH82-283D08 | 4.91E-06 | chr20:37508675-37684858 | chr3:55599537-55792885 | ↑ gain in T | <i>ERC2</i> | ELKS/RAB6-interacting/CAST family member 2 | 3p14.3 |
| | | | | | <i>C3orf51</i> | chromosome 3 open reading frame 51 | 3p14.3 |
| CH82-326I09 | 5.03E-06 | chr11:13788787-13969984 | nd | ↑ loss in T | | | |
| CH82-465E12 | 5.36E-06 | chr38:18965987-19161116 | chr1:221568796-221824332 | ↑ loss in T | | | |
| CH82-106N08 | 5.52E-06 | chr30:13770057-13795176 | chr15:44356478-44373885 | ↑ loss in T | | | |
| CH82-326P11 | 5.58E-06 | chr11:34247809-34423350 | chr9:10562093-10757698 | ↑ loss in T | | | |
| CH82-313B16 | 5.73E-06 | chr20:40862782-41039499 | chr3:51620433-51846942 | ↑ gain in T | <i>FRMD5</i> | FERM domain containing 5 | 15q15.3 |
| | | | | | <i>PTPRD</i> | protein tyrosine phosphatase, receptor type, D | 9p23-p24.3 |
| | | | | | <i>RAD54L2</i> | RAD54-like 2 (S. cerevisiae) | 3p21.2 |
| | | | | | <i>TEX264</i> | testis expressed 264 | 3p21.31 |
| | | | | | <i>GRM2</i> | glutamate receptor, metabotropic 2 | 3p21.2 |
| | | | | | <i>IQCF6</i> | IQ motif containing F6 | 3p21.2 |
| | | | | | <i>DNAH1</i> | dynein, axonemal, heavy chain 1 | 3p21.1 |
| | | | | | <i>BAP1</i> | BRCA1 associated protein-1 (ubiquitin carboxy-terminal hydrolase) | 3p21.31-p21.2 |
| | | | | | <i>PHF7</i> | PHD finger protein 7 | 3p21.1 |
| | | | | | <i>SEMA3G</i> | sema domain, immunoglobulin domain (Ig), short basic domain, secreted, (semaphorin) 3G | 3p21.1 |
| | | | | | <i>TNNC1</i> | troponin C type 1 (slow) | 3p21.3-p14.3 |
| | | | | | <i>NISCH</i> | nischarin | 3p21.1 |
| <i>STAB1</i> | stabilin 1 | 3p21.1 | | | | | |
| <i>NT5DC2</i> | 5'-nucleotidase domain containing 2 | 3p21.1 | | | | | |
| <i>PBRM1</i> | polybromo 1 | 3p21 | | | | | |
| CH82-313O22 | 5.82E-06 | chr29:16852524-17055678 | chr8:64800376-65025232 | ↑ gain in T | | | |
| CH82-465H08 | 6.06E-06 | chr38:16739980-16926449 | chr1:218892467-219122824 | ↑ loss in T | | | |
| CH82-320D03 | 6.19E-06 | chr20:40178327-40372988 | chr3:52420229-52631580 | ↑ gain in T | | | |
| CH82-307K12 | 6.49E-06 | chr38:12820932-12993661 | chr1:188214552-188433196 | ↑ loss in T | | | |
| CH82-287E02 | 6.56E-06 | chr9:7511356-7719383 | chr17:73881867-74136891 | ↑ gain in T | <i>TRIM65</i> | tripartite motif-containing 65 | 17q25.1 |
| | | | | | <i>MRPL38</i> | mitochondrial ribosomal protein L38 | 17q25.3 |
| | | | | | <i>FBF1</i> | Fas (TNFRSF6) binding factor 1 | 17q25.1 |
| | | | | | <i>ACOX1</i> | acyl-Coenzyme A oxidase 1, palmitoyl | 17q24-q25 17q25.1 |
| | | | | | <i>CLTorf106</i> | chromosome 17 open reading frame 106 | 17q25.1 |
| | | | | | <i>CDK3</i> | cyclin-dependent kinase 3 | 17q22-qter |
| | | | | | <i>EVPL</i> | envoplakin | 17q25 |
| | | | | | <i>SRP68</i> | signal recognition particle 68kDa | 17q25.1 |
| | | | | | <i>GALR2</i> | galanin receptor 2 | 17q25.3 |
| | | | | | <i>ZACN1</i> | zinc activated ligand-gated ion channel | 17q25.3 |
| | | | | | <i>EXOC7</i> | exocyst complex component 7 | 17q25.1 |
| | | | | | <i>FOXJ1</i> | forkhead box J1 | 17q22-q25 |
| CH82-323H24 | 6.69E-06 | chr6:5347044-5540968 | chr7:70632489-70881020 | ↑ gain in T | | | |
| CH82-313O20 | 6.77E-06 | chr26:29493753-29700773 | nd | ↑ loss in B | | | |
| CH82-325K13 | 7.06E-06 | chr17:18335211-18548645 | chr2:20550921-20808883 | ↑ loss in T | | | |
| CH82-191D18 | 7.06E-06 | chr17:34789107-34978584 | chr2:39945500-40151332 | ↑ loss in T | | | |
| CH82-184A16 | 7.08E-06 | chr29:3083718-3274149 | chr8:48731266-48893362 | ↑ gain in T | | | |
| CH82-184A16 | 7.08E-06 | chr29:3083718-3274149 | chr8:48731266-48893362 | ↑ gain in T | <i>RHOB</i> | ras homolog gene family, member B | 2p24 |
| | | | | | <i>RHOA</i> | ras homolog gene family, member B | 2p24 |
| CH82-184A16 | 7.08E-06 | chr29:3083718-3274149 | chr8:48731266-48893362 | ↑ gain in T | <i>THUMP2</i> | THUMP domain containing 2 | 2p22.1 2p22-p21 |
| | | | | | <i>PRKDC</i> | protein kinase, DNA-activated, catalytic polypeptide | 8q11 |
| CH82-184A16 | 7.08E-06 | chr29:3083718-3274149 | chr8:48731266-48893362 | ↑ gain in T | <i>MCM4</i> | minichromosome maintenance complex component 4 | 8q11.2 |

| Clone ID | P-value | Dog chromosome location | Human chromosome location | Association | Gene Symbol | Gene Description | Human cytogenetic assignment (Entrez) |
|-------------|----------|-------------------------|---------------------------|--------------------------|------------------|---|---------------------------------------|
| CH82-126N19 | 7.16E-06 | chr23:36325098-36545513 | chr3:136560966-136796268 | ↓ loss in T | <i>TMEM22</i> | transmembrane protein 22 | 3q22.3 |
| | | | | | <i>NCK1</i> | NCK adaptor protein 1 | 3q21 |
| | | | | | <i>IL20RB</i> | interleukin 20 receptor beta | 3q22.3 |
| CH82-323J24 | 7.43E-06 | chr29:34089937-34252905 | chr8:85404014-85569621 | ↑ gain in T | <i>RALYL</i> | RALY RNA binding protein-like | 8q21.2 |
| CH82-106H09 | 7.53E-06 | chr29:32308350-32504845 | chr8:83192551-83389790 | ↑ gain in T | | | |
| CH82-323C23 | 8.27E-06 | chr9:60409246-60620851 | chr9:128652708-128896784 | ↑ gain in T | <i>PBX3</i> | pre-B-cell leukemia homeobox 3 | 9q33-q34 |
| CH82-182D13 | 8.36E-06 | chr38:20156017-20370321 | chr1:166036813-166340889 | ↑ loss in T | <i>FAM78B</i> | family with sequence similarity 78, member B | 1q24.1 |
| | | | | | <i>MIR921</i> | microRNA 921 | 1q24.1 |
| CH82-122E24 | 8.91E-06 | chr5:30408016-30612845 | chr11:104298356-104516456 | ↑ loss in T | | | |
| CH82-283K03 | 8.91E-06 | chr11:10542126-10752622 | chr5:117307578-117525785 | ↑ loss in T | | | |
| CH82-126J24 | 8.92E-06 | chrX:66297723-66532843 | nd | ↑ gain in B/ ↑ loss in T | | | |
| CH82-518A12 | 1.14E-05 | chr28:4306590-4500535 | chr10:50597303-50843683 | ↑ loss in T | <i>DRGX</i> | dorsal root ganglia homeobox | 10q11.23 |
| | | | | | <i>ERCC6</i> | excision repair cross-complementing rodent repair deficiency, complementation group 6 | 10q11.23 |
| | | | | | <i>PCBD3</i> | piqvBac transposable element derived 3 | 10q11 |
| | | | | | <i>CHAT</i> | choline acetyltransferase | 10q11.2 |
| | | | | | <i>SLC18A3</i> | solute carrier family 18 (vesicular acetylcholine), member 3 | 10q11.2 |
| CH82-94G19 | 1.22E-05 | chr17:61699577-61879108 | chr1:145410389-145632099 | ↑ loss in T | <i>HFE2</i> | hemochromatosis type 2 (juvenile) | 1q21.1 |
| | | | | | <i>TXNIP</i> | thioredoxin interacting protein | 1q21.1 |
| | | | | | <i>POLR3GL</i> | polymerase (RNA) III (DNA directed) polypeptide G (32kD)-like | 1q21.1 |
| | | | | | <i>ANKRD34A</i> | ankyrin repeat domain 34A | 1q21.1 |
| | | | | | <i>LIX1L</i> | Lix1 homolog (mouse)-like | 1q21.1 |
| | | | | | <i>RBM8A</i> | RNA binding motif protein 8A | 1q12 |
| | | | | | <i>GNRH2</i> | gonadotropin-releasing hormone (type 2) receptor 2 | 1q12 |
| | | | | | <i>PEX11B</i> | peroxisomal biogenesis factor 11 beta | 1q21.1 |
| | | | | | <i>ITGA10</i> | integrin, alpha 10 | 1q21 |
| | | | | | <i>ANKRD35</i> | ankyrin repeat domain 35 | 1q21.1 |
| | | | | | <i>PIAS3</i> | protein inhibitor of activated STAT, 3 | 1q21 |
| | | | | | <i>NUDT17</i> | nudix (nucleoside diphosphate linked moiety X)-type motif 17 | 1q21.1 |
| | | | | | <i>POLR3C</i> | polymerase (RNA) III (DNA directed) polypeptide C (62kD) | 1q21.1 |
| | | | | | <i>RNF115</i> | ring finger protein 115 | 1q21.1 |
| CH82-335L10 | 1.22E-05 | chr36:25648504-25871279 | chr2:179909543-180205511 | ↑ gain in T | <i>CCDC141</i> | coiled-coil domain containing 141 | 2q31.2 |
| | | | | | <i>SESTD1</i> | SEC14 and spectrin domains 1 | 2q31.2 |
| CH82-332F13 | 1.26E-05 | chr20:10314881-10478254 | chr3:10941677-11124671 | ↑ gain in T | <i>SLC6A11</i> | solute carrier family 6 (neurotransmitter transporter, GABA), member 11 | 3p25.3 |
| | | | | | <i>SLC6A1</i> | solute carrier family 6 (neurotransmitter transporter, GABA), member 1 | 3p25-p24 |
| CH82-186J14 | 1.30E-05 | chr17:61930911-62137623 | chr1:149179230-149706240 | ↑ loss in T | <i>LOC388692</i> | hypothetical LOC388692 | 1q21.2 |
| | | | | | <i>FCGR1C</i> | Fc fragment of IgG, high affinity 1c, receptor (CD64) | 1q21.2 |
| | | | | | <i>HIST2H2BF</i> | histone cluster 2, H2bf | 1q21.2 |
| | | | | | <i>PPIAL4A</i> | peptidylprolyl isomerase A (cyclophilin A)-like 4A | 1q21.2 |
| | | | | | <i>PPIAL4G</i> | peptidylprolyl isomerase A (cyclophilin A)-like 4G | |
| | | | | | <i>PPIAL4C</i> | peptidylprolyl isomerase A (cyclophilin A)-like 4C | 1q21.2 |
| | | | | | <i>PPIAL4B</i> | peptidylprolyl isomerase A (cyclophilin A)-like 4B | 1q21.1 |
| | | | | | <i>LOC728855</i> | hypothetical LOC728855 | 1q21.1 |
| CH82-326M16 | 1.51E-05 | chr17:47713690-47895377 | chr2:79388696-79644918 | ↑ loss in T | | | |
| CH82-465M14 | 1.58E-05 | chr30:23314624-23526903 | chr15:55207135-55393639 | ↑ loss in T | | | |
| CH82-182A16 | 1.77E-05 | chr11:37999014-38200895 | chr9:14487681-14734319 | ↑ loss in T | <i>ZDHHC21</i> | zinc finger, DHHC-type containing 21 | 9p22.3 |
| | | | | | <i>CER1</i> | cerberus 1, cysteine knot superfamily, homolog (Xenopus laevis) | 9p23-p22 |
| CH82-307M10 | 2.01E-05 | chr17:11406667-11608797 | chr2:11914569-12153597 | ↑ loss in T | <i>LPIN1</i> | lipin 1 | 2p25.1 |