

**Supplemental table 11. Genes with CTA gene expression pattern that have not previously been reported in the CTdatabase**

| Gene ID       | Description   | Function                   | Subcellular localization | Chr <sup>A</sup> | % NSCLC | % AC | % SCC | Reported in NSCLC <sup>B</sup> |
|---------------|---|----------------------------|--------------------------|------------------|---------|------|-------|--------------------------------|
| CT83          | Cancer/testis antigen 83                                  | Not known                  | Cell membrane            | X                | 5.5     | 7.3  | 3.0   | No                             |
| OR56A3        | Olfactory receptor, family 56, subfamily A, member 3      | Odorant receptor           | Cell membrane            | 11               | 14.6    | 2.8  | 6.0   | No                             |
| OR52E2        | Olfactory receptor, family 52, subfamily E, member 2      | Odorant receptor           | Cell membrane            | 11               | 3.0     | 0.9  | 3.0   | No                             |
| GNGT1         | Guanine nucleotide binding protein                        | Transmembrane signaling    | Cell membrane            | 7                | 8.5     | 5.5  | 13.4  | No                             |
| TSPY10        | Testis-specific protein, Y-linked 10                      | Sperm development          | Cytoplasm                | Y                | 1.5     | 0.0  | 3.0   | No                             |
| TUBA3C        | Tubulin, $\alpha$ 3c                                      | Microtubules               | Cytoplasm                | 13               | 2.0     | 2.8  | 0.0   | No                             |
| STK31         | Serine/threonine kinase 31                                | ATP binding                | Cytoplasm                | 7                | 3.0     | 5.5  | 0.0   | No                             |
| LIN28B        | Lin-28 homolog B (C. elegans)                             | miRNA suppressor           | Cytoplasm                | 6                | 3.5     | 0.0  | 6.0   | Yes                            |
| PIWIL3        | Piwi-like RNA-mediated gene silencing 3                   | Spermatogenesis            | Cytoplasm                | 22               | 2.0     | 2.8  | 1.5   | No                             |
| COX7B2        | Cytochrome c oxidase subunit VIIb2                        | Electron transport         | Cytoplasm                | 4                | 21.6    | 5.5  | 17.9  | No                             |
| SEPT14        | Septin 14   | Cytokinesis                | Cytoplasm                | 7                | 3.0     | 1.8  | 3.0   | No                             |
| STRA8         | Stimulated by retinoic acid 8                             | Meiosis                    | Cytoplasm                | 7                | 3.0     | 1.8  | 4.5   | No                             |
| TKTL1         | Transketolase-like 1                                      | Catalytic activity         | Cytoplasm                | X                | 1.5     | 0.9  | 3.0   | Yes                            |
| SLC6A5        | Solute carrier family 6 member 5                          | Neurotransmission          | Membrane                 | 11               | 3.0     | 2.8  | 1.5   | No                             |
| SUN3          | Sad1 and UNC84 domain containing 3                        | Not known                  | Membrane                 | 7                | 8.0     | 9.2  | 6.0   | No                             |
| DPEP3         | Dipeptidase 3   | Meiosis                    | Membrane                 | 16               | 1.5     | 0.0  | 3.0   | No                             |
| ERVV-2        | Endogenous retrovirus group V, member 2                   | Not known                  | Not known                | 19               | 1.5     | 0.9  | 3.0   | No                             |
| RP11-180C1.1  | NA  | Not known                  | Not known                | 4                | 2.5     | 3.7  | 1.5   | No                             |
| CXorf67       | Chromosome X open reading frame 67                        | Not known                  | Not known                | X                | 1.5     | 0.0  | 3.0   | No                             |
| DSCR4         | Down syndrome critical region 4                           | Not known                  | Not known                | 21               | 1.5     | 0.9  | 3.0   | No                             |
| WDR87         | WD repeat domain 87                                       | Not known                  | Not known                | 19               | 2.0     | 2.8  | 1.5   | No                             |
| VCX           | Variable charge, X-linked                                 | Spermatogenesis            | Not known                | X                | 2.5     | 1.8  | 4.5   | Yes                            |
| UBE2U         | Ubiquitin-conjugating enzyme E2U                          | Ubiquitin activity         | Not known                | 1                | 1.5     | 2.8  | 0.0   | No                             |
| LETM2         | Leucine zipper-EF-hand containing transmembrane protein 2 | Not known                  | Not known                | 8                | 1.5     | 0.0  | 4.5   | Yes                            |
| CHAT          | Choline O-acetyltransferase                               | Catalytic activity         | Not known                | 10               | 2.0     | 2.8  | 0.0   | Yes                            |
| AC008271.1    | NA  | Not known                  | Not known                | 2                | 5.5     | 7.3  | 3.0   | No                             |
| GAB4          | GRB2-associated binding protein family, member 4          | Not known                  | Not known                | 22               | 2.5     | 0.9  | 4.5   | No                             |
| XAGE1A        | X antigen family, member 1A                               | Not known                  | Not known                | X                | 2.5     | 2.8  | 0.0   | Yes                            |
| MAGEB16       | Melanoma antigen family B16                               | Not known                  | Not known                | X                | 3.0     | 1.8  | 3.0   | No                             |
| C12orf56      | Chromosome 12 open reading frame 56                       | Not known                  | Not known                | 12               | 2.5     | 0.9  | 4.5   | No                             |
| RP11-480I12.4 | NA  | Not known                  | Not known                | 1                | 2.5     | 2.8  | 3.0   | No                             |
| OFCC1         | Orofacial cleft 1 candidate 1                             | Not known                  | Not known                | 6                | 9.6     | 7.3  | 14.9  | No                             |
| C12orf54      | Chromosome 12 open reading frame 54                       | Not known                  | Not known                | 12               | 4.5     | 0.0  | 13.4  | No                             |
| DCAF4L2       | DDB1 and CUL4 associated factor 4-like 2                  | Not known                  | Not known                | 8                | 5.0     | 2.8  | 6.0   | No                             |
| TDRD12        | Tudor domain containing 12                                | Spermatogenesis            | Not known                | 19               | 1.5     | 0.0  | 4.5   | No                             |
| FAM71F1       | Family with sequence similarity 71, member F1             | Not known                  | Not known                | 7                | 1.5     | 0.0  | 4.5   | No                             |
| AL121901.1    | Nasopharyngeal carcinoma-related protein YH1; U           | Not known                  | Not known                | 20               | 16.6    | 9.2  | 0.0   | No                             |
| RP11-187E13.2 | NA  | Not known                  | Not known                | 14               | 2.5     | 3.7  | 0.0   | No                             |
| SKOR2         | SKI family transcriptional corepressor 2                  | Transcriptional repressor  | Nucleus                  | 18               | 3.0     | 2.8  | 0.0   | No                             |
| ZNF560        | Zinc finger protein 560                                   | Transcriptional regulation | Nucleus                  | 19               | 8.5     | 9.2  | 7.5   | No                             |
| NOZNF679      | Zinc finger protein 679                                   | Transcriptional regulation | Nucleus                  | 7                | 23.1    | 5.5  | 7.5   | No                             |
| ZNF716        | Zinc finger protein 716                                   | Transcriptional regulation | Nucleus                  | 7                | 5.0     | 4.6  | 4.5   | No                             |
| PRDM9         | PR domain containing 9                                    | Histone methyltransferase  | Nucleus                  | 5                | 3.5     | 1.8  | 4.5   | No                             |
| TGIF2LX       | TGFB-induced factor homeobox 2-like, X-linked             | Transcription in testis    | nucleus                  | X                | 16.1    | 6.4  | 9.0   | No                             |
| POU4F2        | POU class 4 homeobox 2                                    | Transcription              | Nucleus                  | 4                | 2.5     | 2.8  | 0.0   | Yes                            |
| USP26         | Ubiquitin specific peptidase 26                           | AR receptor regulator      | Nucleus                  | X                | 1.5     | 0.0  | 4.5   | No                             |
| FEZF1         | FEZ family zinc finger 1                                  | Transcription              | Nucleus                  | 7                | 32.1    | 34.3 | 33.8  | No                             |
| NKX2-4        | NK2 homeobox 4  | Transcription factor       | Nucleus                  | 20               | 5.5     | 4.6  | 6.0   | No                             |
| NOBOX         | NOBOX oogenesis homeobox                                  | Transcription factor       | Nucleus                  | 7                | 1.5     | 0.0  | 3.0   | No                             |
| H2BFM         | H2B histone family, member M                              | Histone activity           | Nucleus                  | X                | 7.0     | 0.9  | 16.4  | Yes                            |
| SMC1B         | Structural maintenance of chromosomes 1B                  | Meiosis                    | Nucleus                  | 22               | 6.5     | 5.5  | 6.0   | No                             |
| CST8          | Cystatin 8  | Sperm development          | Secreted                 | 20               | 2.5     | 0.0  | 3.0   | No                             |
| WFDC3         | WAP four-disulfide core domain 3                          | Not known                  | Secreted                 | 20               | 5.5     | 8.3  | 3.0   | No                             |
| INSL4         | Insulin-like 4 (placenta)                                 | development                | Secreted                 | 9                | 10.1    | 13.8 | 3.0   | No                             |
| FGF4          | Fibroblast growth factor 4                                | Development                | Secreted                 | 11               | 2.0     | 0.9  | 3.0   | Yes                            |

<sup>A</sup>Chr, location on chromosome. <sup>B</sup>This column indicates whether genes have been reported in the context of NSCLC by a PubMed search.