

Additional table 2: list of identified ARTD8 substrates

| ProtoArray Identifier | Uniprot Identifier | Full-length protein name | Z-score | Comments |
|-----------------------|--------------------|---|---------|-----------------------|
| CENPB | CENPB_HUMAN | Major centromere autoantigen B | 26,1 | |
| NM_138565.1 | SRC8_HUMAN | Src substrate cortactin | 21,6 | |
| NM_000282.1 | Q5JTW5_HUMAN | Propionyl coenzyme A carboxylase, alpha polypeptide | 21,3 | Biotin-binding enzyme |
| NM_032345.1 | F8VT68_HUMAN | Within bgcn homolog (Drosophila) | 15,0 | |
| NM_007285.5 | GBRL2_HUMAN | Gamma-aminobutyric acid receptor-associated protein-like 2 | 13,9 | |
| NM_003403.3 | TYY1_HUMAN | Transcriptional repressor protein YY1 | 11,6 | |
| NM_004965.3 | HMG1_HUMAN | Non-histone chromosomal protein HMG-14 | 10,8 | |
| NM_152434.1 | F8W6W6_HUMAN | CWF19-like 2, cell cycle control (S. pombe) | 9,9 | |
| NM_015640.1 | PAIRB_HUMAN | Plasminogen activator inhibitor 1 RNA-binding protein | 9,3 | |
| Histone_F2a2 | | Histones H2A and H4 | 9,2 | |
| NM_032141.1 | NSRP1_HUMAN | Nuclear speckle splicing regulatory protein 1 | 8,9 | |
| NM_144659.1 | TCP1L_HUMAN | T-complex protein 10A homolog 2 | 8,6 | |
| BC005004.1 | FA64A_HUMAN | Protein FAM64A | 8,6 | |
| NM_133336.1 | NSD2_HUMAN | Probable histone-lysine N-methyltransferase NSD2 | 8,5 | |
| PV4552 | VDR_HUMAN | Vitamin D3 receptor | 8,4 | |
| histone | | Histone (unfractionated whole histone) | 8,2 | |
| BC030711.2 | | C2orf13 | 8,1 | |
| PV3186 | KPCI_HUMAN | Protein kinase C iota type | 8,0 | |
| PV4762 | THA_HUMAN | Thyroid hormone receptor alpha | 7,8 | |
| NM_024692.3 | CLIP4_HUMAN | CAP-Gly domain-containing linker protein 4 | 7,8 | |
| BC008623.1 | ROBO3_HUMAN | Roundabout homolog 3 | 7,7 | |
| P3049 | ABL1_HUMAN | Tyrosine-protein kinase ABL1 | 7,7 | |
| NM_002013.2 | FKB15_HUMAN | FK506-binding protein 15 | 7,2 | |
| NM_004113.3 | FGF12_HUMAN | Fibroblast growth factor 12 | 7,2 | |
| NM_032350.3 | | C7orf50 | 7,0 | |
| NM_005639.1 | SYT1_HUMAN | Synaptotagmin-1 | 6,8 | |
| NM_145865.1 | ANS4B_HUMAN | Ankyrin repeat and SAM domain-containing protein 4B | 6,7 | |
| NM_015933.1 | CCD72_HUMAN | Coiled-coil domain-containing protein 72 | 6,6 | |
| BC053895.1 | IRS1_HUMAN | Insulin receptor substrate 1 | 6,5 | |
| PV3973 | KGP2_HUMAN | cGMP-dependent protein kinase 2 | 6,4 | |
| PV3366 | F5H1T4_HUMAN | V-erb-b2 erythroblastic leukemia viral oncogene homolog 2 | 6,3 | |
| NM_003295.1 | TCTP_HUMAN | Translationally-controlled tumor protein | 6,3 | |
| NM_017949.1 | CUED1_HUMAN | CUE domain-containing protein 1 | 6,3 | |
| NM_001023.2 | E5RIP1_HUMAN | Ribosomal protein S20 | 6,2 | |
| BC020221.1 | STAC_HUMAN | SH3 and cysteine-rich domain-containing protein | 5,7 | |
| BC010125.1 | | C3orf37 | 5,6 | |
| NM_014583.2 | LMCD1_HUMAN | LIM and cysteine-rich domains protein 1 | 5,5 | |
| PV3249 | CSF1R_HUMAN | Macrophage colony-stimulating factor 1 receptor | 5,5 | |
| TopoI | TOP1_HUMAN | DNA topoisomerase 1 | 5,2 | |
| PV3967 | FLT3_HUMAN | Receptor-type tyrosine-protein kinase FLT3; D835Y | 5,2 | |
| BC051688.1 | | hypothetical protein FLJ10781 | 5,2 | |
| BC033758.1 | Q2V6Q1_HUMAN | Centaurin alpha 2 | 5,1 | |
| PV4211 | M4K2_HUMAN | Mitogen-activated protein kinase kinase kinase kinase 2 | 5,1 | |
| BC025700.1 | AFF4_HUMAN | AF/FMR2 family, member 4 | 5,1 | |
| BC017070.1 | CLUA1_HUMAN | Clusterin-associated protein 1 | 5,0 | |
| PV4131 | CCNT1_human | Cyclin T1 | 5,0 | |
| NM_080390.3 | TAL2_HUMAN | Transcription elongation factor A protein-like 2 | 5,0 | |
| NM_134323.1 | TRBP2_HUMAN | RISC-loading complex subunit TARBP2 | 4,9 | |
| PV3815 | B4DLT4_HUMAN | Ribosomal protein S6 kinase, 70kDa, polypeptide 1 | 4,9 | |
| BC024725.1 | ANR50_HUMAN | Ankyrin repeat domain-containing protein 5 | 4,8 | |
| NM_020166.2 | G5E9X5_HUMAN | Methylcrotonoyl-Coenzyme A carboxylase 1 (alpha) (MCCC1) | 4,8 | Biotin-binding enzyme |
| NM_178151.1 | DCX_HUMAN | Neuronal migration protein doublecortin | 4,7 | |
| PV3869 | KIT_HUMAN | Mast/stem cell growth factor receptor Kit mutant protein: KIT T670I | 4,7 | |
| NM_017588.1 | WDR5_HUMAN | WD repeat-containing protein 5 | 4,7 | |
| PHG0046 | PDGFB_HUMAN | Platelet-derived growth factor subunit B | 4,6 | |
| PV3879 | PKN2_HUMAN | Serine/threonine-protein kinase N2 | 4,5 | |
| NM_002822.1 | TWF1_HUMAN | Twinfilin-1 | 4,5 | |
| PV3299 | MAPK3_HUMAN | MAP kinase-activated protein kinase 3 | 4,5 | |
| PV3792 | TTK_HUMAN | Dual specificity protein kinase TTK | 4,5 | |
| NM_018553.1 | | C17orf85 | 4,5 | |
| NM_015414.2 | (RL36_HUMAN) | 60S ribosomal protein L36 | 4,5 | |
| PV3836 | IKKB_HUMAN | Inhibitor of nuclear factor kappa-B kinase subunit beta | 4,5 | |
| PV3822 | M3K2_HUMAN | Mitogen-activated protein kinase kinase kinase 2 | 4,4 | |
| PV4792 | SIK2_HUMAN | Serine/threonine-protein kinase SIK2 | 4,4 | |
| PV3829 | SRPK2_HUMAN | SFRS protein kinase 2 (SRPK2), transcript variant 2 | 4,4 | |
| NM_005801.2 | EIF1_HUMAN | Eukaryotic translation initiation factor 1 | 4,4 | |
| PV4130 | TOPK_HUMAN | Lymphokine-activated killer T-cell-originated protein kinase | 4,4 | |
| P2251 | KPCB_HUMAN | Protein kinase C beta type | 4,3 | |
| NM_021627.2 | SEN2_HUMAN | Sentrin-specific protease 2 | 4,3 | |
| BC026345.1 | ERMIN_HUMAN | Ermin | 4,3 | |
| PV3857 | KSYK_HUMAN | Tyrosine-protein kinase SYK | 4,3 | |
| BC001728.1 | TFPT_HUMAN | TCF3 fusion partner | 4,3 | |
| NM_032765.1 | TRI52_HUMAN | Tripartite motif-containing protein 52 | 4,3 | |
| PV4129 | VGFR3_HUMAN | Vascular endothelial growth factor receptor 3 | 4,2 | |
| NM_199124.1 | | C11orf63 | 4,2 | |
| BC056415.1 | RPAP3_HUMAN | RNA polymerase II-associated protein 3 | 4,2 | |

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|-------------|---------------|---|--------------------------|
| PV3371 | BMX_HUMAN | Cytoplasmic tyrosine-protein kinase BMX | 4,1 |
| BC017227.1 | PHLP_HUMAN | Phosducin-like protein | 4,1 |
| PV3808 | INSRR_HUMAN | Insulin receptor-related protein | 4,1 |
| NM_020836.2 | BEGIN_HUMAN | Brain-enriched guanylate kinase-associated protein | 4,1 |
| NM_013242.1 | | C16orf80 | 4,1 |
| NM_025241.1 | UBXN6_HUMAN | UBX domain-containing protein 6 | 4,1 |
| PV4883 | ACVL1_HUMAN | Serine/threonine-protein kinase receptor R3 | 4,1 |
| BC001132.1 | DDX54_HUMAN | ATP-dependent RNA helicase DDX54 | 4,0 |
| BC050616.1 | TSSC4_HUMAN | Protein TSSC4 | 4,0 |
| PV3817 | WEE1_HUMAN | Wee1-like protein kinase | 4,0 |
| BC062353.1 | | C1orf131 | 4,0 |
| NM_005038.1 | PPID_HUMAN | Peptidyl-prolyl cis-trans isomerase D | 3,9 |
| PV3660 | VGFR2_HUMAN | Vascular endothelial growth factor receptor 2 | 3,9 |
| PV3146 | FGFR1_HUMAN | Fibroblast growth factor receptor 1 | 3,8 |
| NM_001571.2 | IRF3_HUMAN | Interferon regulatory factor 3 | 3,8 |
| PV3657 | STK25_HUMAN | Serine/threonine-protein kinase 25 | 3,8 |
| NM_014047.1 | | C19orf53 | 3,6 |
| NM_198501.1 | SMTL2_HUMAN | Smoothelin-like protein 2 | 3,6 |
| PV4674 | AAPK2_HUMAN | 5'-AMP-activated protein kinase catalytic subunit alpha-2 | 3,6 |
| NM_016096.1 | ZN706_HUMAN | Zinc finger protein 706 | 3,6 |
| P2287 | KPCD_HUMAN | Protein kinase C delta type | 3,6 |
| BC000479.1 | B7Z5R1_HUMAN | V-akt murine thymoma viral oncogene homolog 1 | 3,6 |
| PV3785 | DYR1A_HUMAN | Dual specificity tyrosine-phosphorylation-regulated kinase 1A | 3,6 |
| PV3501 | PLK1_HUMAN | Polo-like kinase 1 | 3,5 |
| BC001396.1 | | C9orf32 | 3,5 |
| PV4310 | IKKA_HUMAN | Inhibitor of nuclear factor kappa-B kinase subunit alpha | 3,5 |
| P2268 | KPCZ_HUMAN | Protein kinase C zeta type | 3,5 |
| PV3251 | EPHB4_HUMAN | Ephrin type-B receptor 4 | 3,5 |
| PV3878 | MARK2_HUMAN | Serine/threonine-protein kinase MARK2 | 3,5 |
| NM_001014.2 | RS10_HUMAN | 40S ribosomal protein S10 | 3,5 |
| BC009762.2 | TRI41_HUMAN | E3 ubiquitin-protein ligase TRIM41 | 3,4 |
| NM_003616.2 | G5EA29_HUMAN) | Survival of motor neuron protein interacting protein 1 | 3,4 |
| NM_016287.2 | HP1B3_HUMAN | Heterochromatin protein 1-binding protein 3 | 3,4 |
| NM_003992.1 | CLK3_HUMAN | Dual specificity protein kinase CLK3 | 3,4 |
| PV4297 | DCLK2_HUMAN | Serine/threonine-protein kinase DCLK2 | 3,4 |
| NM_016483.3 | PHF7_HUMAN | PHD finger protein 7 | 3,4 |
| NM_018990.1 | | CXorf9 | 3,4 |
| PV3789 | PAK3_HUMAN | Serine/threonine-protein kinase PAK 3 | 3,4 |
| NM_024946.1 | F192A_HUMAN | Protein FAM192A | 3,4 |
| PV3292 | CDK1_HUMAN | Cyclin-dependent kinase 1 | 3,4 |
| NM_152615.1 | PAR15_HUMAN | Poly [ADP-ribose] polymerase 15 | 3,4 NAD-consuming enzyme |
| PV4803 | EGFR_HUMAN | Epidermal growth factor receptor | 3,4 |
| P2282 | KPCE_HUMAN | Protein kinase C epsilon type | 3,3 |
| BC060828.1 | ARI3A_HUMAN | AT-rich interactive domain-containing protein 3A | 3,3 |
| NM_144594.1 | GTSF1_HUMAN | Gametocyte-specific factor 1 | 3,3 |
| BC064984.1 | ASXL1_HUMAN | Putative Polycomb group protein ASXL1 | 3,3 |
| PV3819 | RET_HUMAN | Proto-oncogene tyrosine-protein kinase receptor Ret | 3,3 |
| BC011707.1 | NRBF2_HUMAN | Nuclear receptor-binding factor 2 | 3,2 |
| P2782 | ZAP70_HUMAN | Tyrosine-protein kinase ZAP-70 | 3,2 |
| BC029046.1 | H10_HUMAN | Histone H1.0 | 3,2 |
| PV3266 | ABL2_HUMAN | Abelson tyrosine-protein kinase 2 | 3,2 |
| PV3354 | FES_HUMAN | Tyrosine-protein kinase Fes/Fps | 3,2 |
| BC020726.1 | SCEL_HUMAN | Sciellin | 3,2 |
| PV3851 | MARK4_HUMAN | MAP/microtubule affinity-regulating kinase 4 | 3,2 |
| PV4680 | PGFRA_HUMAN | Platelet-derived growth factor receptor alpha | 3,2 |
| NM_032329.4 | ING5_HUMAN | Inhibitor of growth protein 5 | 3,2 Validated |
| BC011842.2 | | hypothetical protein FLJ11184 | 3,1 |
| BC031691.2 | SLAI2_HUMAN | SLAIN motif-containing protein 2 | 3,1 |
| NM_007045.2 | FR1OP_HUMAN | FGFR1 oncogene partner | 3,1 |
| NM_033414.1 | ZN622_HUMAN | Zinc finger protein 622 | 3,1 |
| NM_152763.2 | | C1orf62 | 3,1 |
| NM_002363.1 | MAGB1_HUMAN | Melanoma-associated antigen B1 | 3,1 |
| BC009967.1 | NTKL_HUMAN | N-terminal kinase-like protein | 3,1 |
| PV3301 | MAPK5_HUMAN | MAP kinase-activated protein kinase 5 | 3,0 |
| PV3811 | PGFRA_HUMAN | Platelet-derived growth factor receptor alpha | 3,0 |
| BC011414.1 | | C5orf3 | 3,0 |
| NM_014481.2 | APEX2_HUMAN | DNA-(apurinic or apyrimidinic site) lyase 2 | 3,0 |
| BC051868.2 | UBE2O_HUMAN | Ubiquitin-conjugating enzyme E2 O | 3,0 |
| NM_023015.3 | INT3_HUMAN | Integrator complex subunit 3 | 3,0 |