**Supplementary File 1. Design of oligoarray, overview of AR target genes studied, and overview of coregulators considered for analysis.**

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| Supplementary File 1A. 8 x 15K Agilent oligoarray | | |
| Category | **Genes identified**  **for inclusion**  **(n)** | **Genes with available probe**  **(n)** |
| AR target genes | 900 | 898 |
| Coregulators | 181 | 180 |
| Housekeeping genes | 58 | 58 |
| Assay controls | NA | >50 |

NA = not applicable

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| Supplementary File 1B. Genes identified with ≥ 2-fold change in expression in response to androgen exposure. | | | |
| Gene Name | **RefSeq ID** | **Log2FC** | **P value** |
| ABCC1 | NM\_019862 | 1.016771013 | 0.00235921 |
| ABCC4 | NM\_005845 | 2.919594802 | 4.24E-05 |
| ABCG1 | NM\_207627 | -1.490900381 | 0.000135091 |
| ABHD2 | NM\_007011 | 2.616504929 | 2.30E-06 |
| ABI2 | NM\_005759 | -1.318505954 | 0.00036807 |
| ACAD8 | NM\_014384 | 1.344714382 | 6.51E-06 |
| ACAT1 | NM\_000019 | -1.52402911 | 9.37E-05 |
| ACAT2 | NM\_005891 | 1.154517734 | 1.09E-05 |
| ACHE | NM\_015831 | 2.393966166 | 0.000107549 |
| ACSL3 | NM\_004457 | 3.602790679 | 1.24E-07 |
| ACTG2 | NM\_001615 | 5.25234073 | 8.21E-09 |
| ADAM9 | NM\_003816 | 1.035439167 | 0.000364828 |
| ADARB1 | NR\_027673 | 1.311169308 | 1.96E-05 |
| ADD3 | NM\_016824 | -1.018824456 | 0.001483774 |
| AES | NM\_198969 | -1.127586637 | 0.008292396 |
| AFF3 | NM\_002285 | 1.978001674 | 0.000424155 |
| AGPAT2 | NM\_006412 | -1.247558665 | 0.003825014 |
| AGR2 | NM\_006408 | 3.328740809 | 2.31E-06 |
| AIF1 | NM\_004847 | -2.042825292 | 0.006280008 |
| AKAP12 | NM\_144497 | 3.232665292 | 9.89E-06 |
| ALCAM | NM\_001627 | -1.273898036 | 0.001613331 |
| ALDH1A3 | NM\_000693 | 3.01761785 | 2.77E-07 |
| ALDH2 | NM\_000690 | -1.426590861 | 5.38E-06 |
| ALDH4A1 | NM\_003748 | 1.562184892 | 0.000384249 |
| AMD1 | NM\_001634 | 1.084297245 | 1.69E-05 |
| AMIGO2 | NM\_181847 | -5.432142437 | 6.69E-06 |
| ANKH | NM\_054027 | 1.801090084 | 1.56E-05 |
| ANTXR1 | NM\_053034 | -3.240012073 | 4.14E-05 |
| ANXA2 | NM\_001002857 | 3.145816156 | 5.39E-07 |
| ANXA4 | NM\_001153 | 1.035159758 | 2.42E-05 |
| AP1B1 | NM\_001127 | 1.081664797 | 0.031463897 |
| AP2S1 | NM\_004069 | 1.07803876 | 7.03E-05 |
| APOD | NM\_001647 | 1.098055121 | 0.001259376 |
| APP | NM\_000484 | 1.376649718 | 0.008933555 |
| APPBP2 | NM\_006380 | 1.607816576 | 3.44E-05 |
| AQP5 | NM\_001651 | 1.17199052 | 0.000727603 |
| AR | ENST00000374690 | -2.500234858 | 2.92E-06 |
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| Gene Name | **RefSeq ID** | **Log2FC** | **P value** |
| ARF4 | NM\_001660 | 1.073005673 | 6.80E-05 |
| ARHGAP11A | NM\_199357 | -1.561172205 | 0.016201067 |
| ARL4D | NM\_001661 | -1.179179087 | 0.000516582 |
| ASRGL1 | NM\_025080 | 2.295704978 | 6.57E-07 |
| ATAD2 | NM\_014109 | 1.208525799 | 5.21E-05 |
| ATF3 | NM\_001674 | 1.385994224 | 0.0001179 |
| ATF7 | BC042363 | 1.070931006 | 0.001839963 |
| ATP11A | NM\_032189 | -1.320208793 | 0.004160926 |
| ATP1B1 | NM\_001677 | -2.439327518 | 3.39E-05 |
| ATP2B4 | NM\_001684 | -1.246989672 | 0.022274009 |
| AZGP1 | NM\_001185 | 3.886566541 | 4.47E-09 |
| B2M | NM\_004048 | 1.122482937 | 2.87E-05 |
| B4GALT1 | NM\_001497 | 1.369747139 | 0.000689531 |
| BARD1 | NM\_000465 | -2.606232352 | 4.45E-06 |
| BCHE | NM\_000055 | -6.290401574 | 1.42E-08 |
| BMPR1A | NM\_004329 | 1.582994287 | 1.94E-06 |
| BMPR1B | NM\_001203 | 1.028568781 | 2.67E-05 |
| BPTF | NM\_182641 | -1.307772745 | 0.001324046 |
| BTD | NM\_000060 | -1.372606696 | 1.91E-05 |
| BTG2 | NM\_006763 | -1.616303274 | 4.74E-06 |
| C13orf1 | NM\_020456 | 1.748266115 | 0.000656314 |
| C14orf143 | NM\_145231 | -1.744782211 | 2.76E-05 |
| C16orf45 | NM\_033201 | -2.474554295 | 9.67E-07 |
| C1orf116 | NM\_023938 | 1.806120041 | 3.91E-05 |
| C1orf21 | NM\_030806 | 1.952463821 | 8.20E-06 |
| C21orf56 | NM\_032261 | 1.024979966 | 0.001885504 |
| C22orf9 | NM\_015264 | -1.035368088 | 0.039056272 |
| C4B | NM\_001002029 | -1.837953266 | 0.000346797 |
| C9 | NM\_001737 | -1.510456033 | 0.000650997 |
| CA12 | ENST00000178638 | 1.089255537 | 0.019732488 |
| CACNB3 | NM\_000725 | -1.087604753 | 5.78E-05 |
| CALCRL | NM\_005795 | -1.115363183 | 0.000491769 |
| CALD1 | NM\_033138 | -1.747344916 | 1.61E-06 |
| CALU | NM\_001219 | 1.358072939 | 0.000307975 |
| CAMKK2 | NM\_172215 | 1.028239229 | 4.59E-05 |
| CBLB | NM\_170662 | -2.027032354 | 0.002255199 |
| CBX1 | NM\_006807 | -1.173767731 | 7.67E-06 |
| CCDC85B | NM\_006848 | -1.094602552 | 0.000104487 |
| CCL5 | NM\_002985 | 1.058939513 | 0.029990472 |

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| Gene Name | **RefSeq ID** | **Log2FC** | **P value** |
| CCNF | NM\_001761 | -2.870810516 | 0.006268602 |
| CCNG2 | NM\_004354 | -1.680999342 | 3.07E-05 |
| CD302 | NM\_014880 | -1.838593293 | 8.65E-06 |
| CD4 | NM\_000616 | -1.041423865 | 0.00020104 |
| CD59 | NM\_203330 | -1.142359456 | 0.000560948 |
| CDC6 | NM\_001254 | -1.105873053 | 4.31E-05 |
| CDH3 | NM\_001793 | -2.61033525 | 2.48E-05 |
| CDK8 | NM\_001260 | -2.274973763 | 4.51E-06 |
| CDKL5 | NM\_003159 | -1.194232604 | 0.00638491 |
| CFHR4 | NM\_006684 | -1.144350588 | 9.85E-06 |
| CIRBP | NM\_001280 | -1.965016302 | 0.000140862 |
| CITED1 | NM\_004143 | 1.303395977 | 3.72E-05 |
| CLDN12 | NM\_012129 | 1.176067296 | 0.000134163 |
| CLDN8 | NM\_199328 | 1.187112941 | 4.59E-05 |
| CLGN | NM\_004362 | 1.390615449 | 0.000236918 |
| CLK2 | NM\_003993 | -1.046598567 | 0.018411049 |
| CNP | NM\_033133 | -1.203911695 | 0.003143943 |
| COL5A2 | NM\_000393 | -5.587789996 | 3.92E-08 |
| COLEC12 | NM\_130386 | -2.994205644 | 1.18E-06 |
| COPS7A | NM\_016319 | -1.448124298 | 0.031394953 |
| COX17 | NM\_005694 | 1.369019487 | 0.000347641 |
| CPS1 | NM\_001875 | -1.260495957 | 5.60E-06 |
| CRAT | NM\_000755 | -1.917782457 | 0.001978449 |
| CREB3L2 | BC063666 | 1.094191966 | 3.24E-05 |
| CREBBP | NM\_004380 | -1.014085506 | 0.000322754 |
| CREM | NM\_001881 | 1.021017063 | 7.69E-05 |
| CROT | NR\_026585 | 1.072960657 | 0.00011498 |
| CRY1 | NM\_004075 | 1.077137729 | 6.67E-05 |
| CSH1 | NM\_022640 | 1.041982416 | 0.01770198 |
| CTBP1 | NM\_001012614 | -2.176501485 | 0.001392986 |
| CTH | NM\_001902 | 1.361990823 | 8.60E-06 |
| CTNND1 | NM\_001331 | 1.07430315 | 0.001829412 |
| CTSB | NM\_147780 | -1.195986039 | 0.02955374 |
| CUX1 | NM\_181552 | -1.099388587 | 0.00025977 |
| CXADR | NM\_001338 | 1.279675837 | 1.43E-05 |
| CXCR4 | NM\_001008540 | 2.957023645 | 2.65E-06 |
| CXCR7 | NM\_020311 | -4.946354463 | 5.83E-08 |
| CYP1A2 | NM\_000761 | 1.218052936 | 0.000175062 |
| CYP3A7 | NM\_000765 | 2.569629249 | 1.25E-06 |

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| Gene Name | **RefSeq ID** | **Log2FC** | **P value** |
| CYR61 | NM\_001554 | 1.106081942 | 0.00067565 |
| DBI | NM\_020548 | 1.341872572 | 1.28E-05 |
| DDB2 | NM\_000107 | -1.500695989 | 6.89E-06 |
| DDC | NM\_000790 | -5.222559483 | 9.32E-09 |
| DDR1 | NM\_013993 | -1.085233661 | 0.000395434 |
| DDX6 | NM\_004397 | -1.17784158 | 7.93E-05 |
| DHCR24 | NM\_014762 | 1.94376033 | 3.21E-05 |
| DHRS2 | NM\_182908 | 1.074303348 | 1.01E-05 |
| DLG4 | AF028825 | -1.257942533 | 0.033289521 |
| DLX1 | NM\_178120 | 1.58536687 | 0.000514829 |
| DNAJB9 | NM\_012328 | 1.420998048 | 4.67E-05 |
| DNAJC3 | NM\_006260 | 1.128887601 | 0.000127201 |
| DNM1L | NM\_012062 | 1.12840116 | 0.000126398 |
| DPYSL2 | NM\_001386 | -2.242202295 | 0.000257638 |
| EAF2 | NM\_018456 | 3.306778673 | 3.29E-06 |
| EDA | NM\_001005612 | -1.521823474 | 0.040240839 |
| EFNA5 | NM\_001962 | 1.056921914 | 0.003606887 |
| EIF3I | AK289882 | -1.016381244 | 0.038574744 |
| ELF3 | NM\_001114309 | 1.396426247 | 3.00E-05 |
| ELL2 | NM\_012081 | 2.037637754 | 3.45E-06 |
| ENO2 | NM\_001975 | -1.971894407 | 0.001431769 |
| ENPP5 | BX647968 | -1.081864785 | 5.18E-05 |
| EPHA3 | NM\_005233 | 1.953356688 | 0.026597607 |
| EPS8 | NM\_004447 | -1.777744287 | 0.003629934 |
| ERBB2 | NM\_001005862 | -1.074460901 | 7.30E-05 |
| ERO1L | ENST00000395686 | 2.034014671 | 0.000403842 |
| ESR2 | NM\_001040276 | -1.357282526 | 0.03881569 |
| ETV1 | NM\_004956 | 1.41335381 | 0.002115821 |
| EXT1 | NM\_000127 | -1.047304355 | 0.007216163 |
| F2RL1 | NM\_005242 | 2.193368717 | 7.02E-06 |
| FABP3 | BG336702 | 1.047210581 | 0.004270832 |
| FADS1 | NM\_013402 | 1.391594756 | 7.05E-05 |
| FAS | NM\_000043 | 1.133749543 | 0.000103664 |
| FASN | NM\_004104 | 1.2672806 | 0.00363344 |
| FBXO38 | NM\_205836 | 1.089195004 | 5.83E-05 |
| FERMT2 | NM\_001135000 | 1.526265769 | 0.025403175 |
| FGL2 | NM\_006682 | 3.584893412 | 8.84E-07 |
| FKBP5 | NM\_004117 | 4.702702257 | 2.25E-07 |
| FLOT2 | NM\_004475 | -1.056143029 | 2.13E-05 |

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| Gene Name | **RefSeq ID** | **Log2FC** | **P value** |
| FMO5 | NM\_001144829 | 1.357476407 | 0.000537926 |
| FMOD | NM\_002023 | 1.148945703 | 0.049169595 |
| FN1 | NM\_212482 | -2.980177262 | 4.01E-07 |
| FOLH1 | NM\_001014986 | -1.530688393 | 0.001371794 |
| FSTL1 | NM\_007085 | -1.156666179 | 0.000112017 |
| FUT8 | NM\_178154 | -1.411896486 | 4.59E-06 |
| GALK2 | NM\_001001556 | 1.045688574 | 5.00E-05 |
| GALNT3 | NM\_004482 | -2.228204501 | 4.77E-05 |
| GATA2 | NM\_001145661 | -1.631580998 | 0.001321495 |
| GCG | NM\_002054 | -1.201853548 | 5.44E-06 |
| GCLM | NM\_002061 | 1.238357563 | 3.04E-05 |
| GCSH | NM\_004483 | 1.049153765 | 0.008006035 |
| GLIPR1 | NM\_006851 | 2.620220635 | 0.000264122 |
| GLRX2 | NM\_016066 | 1.744343618 | 1.44E-05 |
| GLUD1 | NM\_005271 | 1.093250328 | 1.03E-05 |
| GNB4 | NM\_021629 | 2.042293501 | 3.34E-06 |
| GNL1 | NM\_005275 | -1.244108225 | 0.011298984 |
| GOLIM4 | NM\_014498 | 1.503291469 | 7.36E-05 |
| GOLPH3 | NM\_022130 | 1.156898078 | 7.71E-05 |
| GPC1 | NM\_002081 | -1.17470185 | 0.000146525 |
| GPI | NM\_000175 | -1.268594804 | 0.023012518 |
| GRB10 | NM\_001001555 | -3.584618361 | 4.59E-08 |
| GRB14 | NM\_004490 | -1.139969822 | 3.04E-05 |
| GRB2 | NM\_002086 | -1.066962122 | 0.015970174 |
| GREB1 | NM\_014668 | 1.257541845 | 0.020905052 |
| GSR | NM\_000637 | 1.169910958 | 8.92E-05 |
| GSTM3 | NM\_000849 | -2.809410617 | 0.002783944 |
| GSTT2 | NM\_000854 | 1.330416617 | 0.000109796 |
| GTF2E1 | NM\_005513 | -1.012113672 | 3.64E-05 |
| GTF2I | NM\_001518 | -1.025093644 | 0.000579723 |
| GUCY1A3 | NM\_001130683 | 1.004436099 | 0.002619931 |
| GUSB | NM\_000181 | -1.029144043 | 0.00044627 |
| H2AFZ | NM\_002106 | 1.112149145 | 0.004276549 |
| HBG1 | NM\_000559 | -1.104738818 | 0.009678499 |
| HERC1 | NM\_003922 | -1.134408901 | 0.000421143 |
| HERC3 | NM\_014606 | 2.81659075 | 1.27E-07 |
| HES1 | NM\_005524 | 1.998996688 | 0.000337156 |
| HES6 | NM\_018645 | 3.057048953 | 1.92E-08 |
| HIBADH | NM\_152740 | -1.948350912 | 5.25E-07 |

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| Gene Name | **RefSeq ID** | **Log2FC** | **P value** |
| HIVEP3 | ENST00000372583 | -2.973391124 | 0.001341334 |
| HLA-E | NM\_005516 | -1.005554976 | 0.019122451 |
| HMGCR | NM\_000859 | 1.266418181 | 9.06E-06 |
| HMGN3 | NM\_004242 | -1.104305458 | 6.09E-05 |
| HOMER2 | NM\_199330 | 2.816025557 | 9.91E-07 |
| HOXB13 | NM\_006361 | -1.024955898 | 2.69E-05 |
| HOXC13 | NM\_017410 | -2.044032688 | 7.75E-07 |
| HOXC9 | NM\_006897 | -2.188311498 | 1.36E-06 |
| HPGD | NM\_000860 | 5.607654853 | 2.42E-07 |
| HSD17B14 | NM\_016246 | -1.994898983 | 3.31E-06 |
| HSPA2 | NM\_021979 | 2.652040931 | 0.000154896 |
| HSPA8 | NM\_006597 | 1.285511336 | 0.00013957 |
| ID1 | NM\_002165 | -1.906810419 | 2.80E-06 |
| ID2 | NM\_002166 | 1.361849021 | 0.000166964 |
| ID3 | NM\_002167 | -1.700222564 | 1.93E-05 |
| IDE | NM\_004969 | 1.1578191 | 0.000210335 |
| IDH1 | NM\_005896 | 1.106757797 | 1.47E-05 |
| IDI1 | NM\_004508 | 1.380804796 | 4.78E-05 |
| IGF1 | NM\_000618 | 2.226535851 | 8.39E-05 |
| IGF2 | NM\_000612 | 2.229174667 | 0.015339367 |
| IL1RN | BC068441 | -2.34524523 | 0.005235956 |
| INHBB | NM\_002193 | -1.047040396 | 4.37E-05 |
| INPP4B | NM\_003866 | 1.184714185 | 0.019847561 |
| INPP5A | NM\_005539 | -1.051061726 | 0.001338889 |
| INPP5D | NM\_001017915 | -2.139945738 | 0.000903771 |
| INSIG1 | NM\_198336 | 2.372551837 | 6.80E-07 |
| IQGAP2 | NM\_006633 | 1.130907946 | 0.015014475 |
| ITGAV | NM\_002210 | 2.816053716 | 0.001602242 |
| JUP | NM\_021991 | -1.294706797 | 0.021174046 |
| KCNJ2 | NM\_000891 | -1.160065787 | 0.000145206 |
| KDELR2 | NM\_006854 | 1.370475865 | 3.74E-05 |
| KDELR3 | NM\_016657 | 1.98938687 | 9.31E-06 |
| KIAA0247 | NM\_014734 | -1.615746805 | 7.69E-06 |
| KLF4 | NM\_004235 | 1.805720719 | 1.27E-05 |
| KLF5 | NM\_001730 | 1.934009731 | 1.47E-05 |
| KLK2 | NM\_005551 | 6.118632434 | 1.26E-06 |
| KLK3 | NM\_001030047 | 2.320310125 | 0.001065503 |
| KLK4 | NM\_004917 | 1.767580055 | 1.45E-05 |
| KRT18 | NM\_000224 | 1.012413234 | 0.000395054 |
| KRT19 | NM\_002276 | 4.291577706 | 6.59E-08 |
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| Gene Name | **RefSeq ID** | **Log2FC** | **P value** |
| KRT6C | NM\_173086 | 4.053386108 | 5.34E-05 |
| KRT8 | NM\_002273 | 2.182815823 | 0.002754729 |
| LAMC1 | NM\_002293 | 1.474425165 | 0.000576322 |
| LAT2 | NM\_032464 | 3.176031122 | 0.000115541 |
| LGALS8 | L78132 | -1.373270919 | 0.006575802 |
| LIFR | NM\_002310 | 2.992510409 | 5.23E-06 |
| LIG1 | NM\_000234 | -1.553169352 | 0.000292004 |
| LMAN1 | NM\_005570 | 1.530646173 | 0.004525011 |
| LONRF1 | NM\_152271 | 2.240574604 | 4.52E-07 |
| LRBA | NM\_006726 | -1.071278601 | 0.00043697 |
| LRRC31 | NM\_024727 | -2.316398705 | 0.011969322 |
| LRRFIP2 | NM\_006309 | 1.274071644 | 1.33E-05 |
| LRRN1 | NM\_020873 | -4.007470179 | 3.64E-09 |
| LSS | NM\_002340 | 1.073930326 | 0.000431496 |
| MAF | AF055376 | 4.781947608 | 1.87E-05 |
| MAK | NM\_005906 | 3.280973762 | 1.01E-07 |
| MALT1 | NM\_006785 | 2.307733081 | 2.71E-07 |
| MAN2B1 | NM\_000528 | -1.424534231 | 0.004793775 |
| MANEA | NM\_024641 | -3.838437618 | 8.84E-08 |
| MAP2K4 | NM\_003010 | 1.363629486 | 3.90E-06 |
| MAP4K1 | NM\_001042600 | -2.024461832 | 0.013233613 |
| MAPK6 | NM\_002748 | 1.2206895 | 4.26E-05 |
| MAPK8 | NM\_139047 | -1.417439361 | 0.033929144 |
| MAPKAPK3 | NM\_004635 | -1.001347818 | 0.002604426 |
| MAPRE2 | ENST00000300249 | -3.500806982 | 5.86E-08 |
| MAPT | NM\_016835 | -1.786529427 | 0.001401063 |
| MARS | NM\_004990 | 1.425726522 | 0.002982872 |
| MATN2 | NM\_030583 | -2.601201904 | 6.99E-07 |
| MCM7 | NM\_005916 | -1.0401582 | 5.64E-05 |
| MDK | NM\_001012334 | -1.205007349 | 3.06E-05 |
| MEF2A | NM\_005587 | -1.000000000 | 0.000254661 |
| MERTK | NM\_006343 | 2.772433947 | 2.79E-06 |
| MICAL1 | NM\_022765 | 3.110932711 | 0.000313361 |
| MID1 | NM\_000381 | -4.180144832 | 0.000204981 |
| MMP13 | NM\_002427 | 3.126377014 | 0.004019329 |
| MPHOSPH9 | NM\_022782 | 1.698590247 | 2.20E-05 |
| MPRIP | NM\_015134 | -1.259722825 | 0.00248918 |
| MPZL1 | NM\_024569 | 1.582200389 | 1.88E-06 |
| MRPS27 | NM\_015084 | -1.010630993 | 0.000152656 |
| MTMR9 | NM\_015458 | 2.023520052 | 7.89E-07 |
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| Gene Name | **RefSeq ID** | **Log2FC** | **P value** |
| MUC20 | NM\_152673 | 1.146688524 | 0.000238612 |
| MXI1 | NM\_005962 | -1.38832143 | 0.00053386 |
| MYB | NM\_005375 | -3.996060691 | 2.42E-08 |
| MYC | NM\_002467 | -1.034011624 | 0.00087796 |
| MYLK | NM\_053027 | -3.67446696 | 1.88E-07 |
| MYO1B | NM\_012223 | 1.224264255 | 6.64E-05 |
| MYOZ1 | NM\_021245 | -2.725372014 | 1.34E-07 |
| NAIP | AK311046 | -1.989515065 | 0.002034244 |
| NAT1 | NM\_000662 | 1.041931648 | 1.88E-05 |
| NBL1 | NM\_182744 | 3.635434598 | 2.54E-06 |
| NCKAP1L | NM\_005337 | 1.442216843 | 0.003681318 |
| NCOA2 | NM\_006540 | -1.630946448 | 0.011968447 |
| NDRG1 | NM\_006096 | 4.24579824 | 3.54E-09 |
| NEFL | NM\_006158 | -1.125366415 | 0.000183698 |
| NET1 | NM\_001047160 | -1.371365177 | 3.79E-06 |
| NFIA | NM\_001134673 | -1.239835322 | 9.24E-05 |
| NFIX | NM\_002501 | -1.101269107 | 0.005454665 |
| NFKB1 | NM\_003998 | -1.307971854 | 7.26E-06 |
| NFKBIA | NM\_020529 | 1.291024853 | 2.71E-06 |
| NIPSNAP3A | NM\_015469 | -2.655251587 | 6.94E-06 |
| NKX3-1 | NM\_006167 | 1.796300184 | 0.000197207 |
| NPAT | NM\_002519 | -1.02781547 | 0.000202342 |
| NPC1 | NM\_000271 | 1.973297395 | 5.24E-05 |
| NPPC | ENST00000409852 | 5.324052105 | 3.01E-09 |
| NR4A1 | D85245 | -1.338962813 | 0.015620518 |
| NUCB2 | AK097398 | -1.14572359 | 5.37E-06 |
| NUDT4 | NM\_199040 | -1.016133115 | 0.002166384 |
| ODC1 | NM\_002539 | 1.665031972 | 2.30E-06 |
| OPRK1 | NM\_000912 | -6.573824477 | 1.48E-09 |
| ORM1 | NM\_000607 | 5.967768888 | 4.89E-08 |
| OSR2 | NM\_053001 | -2.258735997 | 1.18E-07 |
| OTUD4 | NM\_199324 | -1.00052631 | 0.042661713 |
| PAK1IP1 | NM\_017906 | 3.348011217 | 1.00E-06 |
| PAK2 | NM\_002577 | -1.116487001 | 0.001181779 |
| PAM | NM\_000919 | -1.211152531 | 0.000163725 |
| PCDH1 | NM\_032420 | 1.601268834 | 0.001146567 |
| PCDH11X | NM\_014522 | -4.129536673 | 0.000263895 |
| PCSK6 | NM\_002570 | -1.999639175 | 0.003852617 |
| PCTP | NM\_021213 | 1.03800735 | 0.001028057 |
| PDE4A | NM\_006202 | -1.183568067 | 0.003585985 |
|  | | | |
| Gene Name | **RefSeq ID** | **Log2FC** | **P value** |
| PDE6A | NM\_000440 | 3.118193293 | 2.71E-06 |
| PDE7A | NM\_002604 | -1.849221484 | 0.002389911 |
| PDIA5 | NM\_006810 | 1.544568313 | 1.61E-06 |
| PECI | NM\_206836 | 1.646708944 | 3.62E-05 |
| PEG3 | NM\_006210 | -3.387554166 | 2.40E-05 |
| PEPD | NM\_000285 | -1.07620818 | 0.011195249 |
| PGC | NM\_002630 | 8.179368455 | 4.04E-09 |
| PGM3 | NM\_015599 | 1.887101088 | 9.18E-07 |
| PHF15 | AK025001 | -2.016728112 | 0.005237951 |
| PHF16 | NM\_014735 | -1.570530297 | 0.000115708 |
| PHLDA2 | NM\_003311 | 2.02860468 | 6.56E-07 |
| PHLDB2 | NM\_145753 | 2.519768917 | 4.86E-05 |
| PIK3R1 | NM\_181523 | -1.036612389 | 9.58E-05 |
| PKIB | NM\_181795 | -1.745734044 | 1.92E-05 |
| PLCB4 | NM\_001172646 | -1.977629547 | 8.16E-05 |
| PMAIP1 | NM\_021127 | 1.330733937 | 0.003614499 |
| PMM2 | NM\_000303 | 1.151830913 | 3.27E-05 |
| PNRC1 | NM\_006813 | -1.061604188 | 0.022050398 |
| PPAP2A | NM\_176895 | 1.891096037 | 1.60E-06 |
| PPFIBP1 | NM\_003622 | 2.297990679 | 0.00016353 |
| PPIC | NM\_000943 | 1.295139898 | 0.000112767 |
| PPM1K | NM\_152542 | 1.049197589 | 0.000886114 |
| PPP1CB | NM\_002709 | 1.034264176 | 6.60E-05 |
| PPP2CB | NM\_001009552 | 1.024890969 | 0.000161842 |
| PRAME | NM\_206956 | -1.557492788 | 0.011378159 |
| PRKAA1 | NM\_206907 | 1.055789571 | 0.007679937 |
| PRKCA | NM\_002737 | 1.048402861 | 0.000411411 |
| PRKD1 | NM\_002742 | -1.768539993 | 1.97E-05 |
| PSMA6 | NM\_002791 | 1.000099579 | 2.49E-05 |
| PSMD8 | NM\_002812 | 1.04844738 | 1.54E-05 |
| PTCH1 | NM\_000264 | -1.066116599 | 0.032680092 |
| PTEN | NM\_000314 | -1.190595123 | 0.007818231 |
| PTPN11 | NM\_002834 | 1.181168673 | 0.019308229 |
| PTPN21 | NM\_007039 | 2.862588758 | 5.05E-08 |
| PTPRM | NM\_002845 | 2.769376818 | 0.001489229 |
| PTPRR | NM\_002849 | -2.506458666 | 0.000231438 |
| PURA | NM\_005859 | -1.400042108 | 8.67E-05 |
| RAB27A | NM\_004580 | 2.201882535 | 1.12E-06 |
| RAB4A | NM\_004578 | 1.236048228 | 4.21E-06 |
| RAB6A | BC044241 | 2.18284584 | 3.87E-07 |
|  | | | |
| Gene Name | **RefSeq ID** | **Log2FC** | **P value** |
| RAD9A | NM\_004584 | -1.425442751 | 0.044235906 |
| RALB | NM\_002881 | -1.057718811 | 0.000131306 |
| RBM6 | NM\_005777 | -1.002217654 | 7.05E-05 |
| RCAN1 | NM\_004414 | 1.389577043 | 3.89E-06 |
| RELN | NM\_005045 | -2.329987476 | 0.002201479 |
| RHOU | NM\_021205 | 2.56431912 | 1.75E-06 |
| RLN2 | NM\_005059 | -2.217478829 | 2.25E-06 |
| RNASE4 | NM\_002937 | 1.390870467 | 2.31E-05 |
| ROR1 | ENST00000371079 | 1.859613208 | 2.13E-05 |
| RPS6KA1 | NM\_002953 | -1.040260779 | 0.030198237 |
| RPS6KA3 | NM\_004586 | 1.245190436 | 0.000110762 |
| RUNX2 | NM\_004348 | 2.471438096 | 5.90E-05 |
| S100A11 | NM\_005620 | 1.196033674 | 3.65E-05 |
| SAP18 | NM\_005870 | -1.127904536 | 0.000653415 |
| SASH1 | NM\_015278 | 1.657827243 | 0.049529458 |
| SCN1B | NM\_199037 | 2.059040982 | 0.007178679 |
| SCNN1A | NM\_001038 | -1.487811278 | 0.040905824 |
| SDC4 | NM\_002999 | -1.601322138 | 0.000391347 |
| SDHA | NM\_004168 | -1.254381876 | 0.021648136 |
| SDK1 | NM\_152744 | 3.36191812 | 0.011245931 |
| SEC24A | BC019341 | 1.153927142 | 0.0038223 |
| SEC24D | NM\_014822 | 1.841360757 | 0.000143376 |
| SEC61B | NM\_006808 | 1.042916443 | 5.94E-05 |
| SELENBP1 | NM\_003944 | -2.607288857 | 3.50E-06 |
| SEMA5A | NM\_003966 | -2.53121744 | 0.000583286 |
| SEPP1 | NM\_005410 | 1.338926967 | 8.12E-06 |
| SERP1 | NM\_014445 | 1.084997232 | 4.04E-05 |
| SERPINB10 | NM\_005024 | 1.293613685 | 0.042516088 |
| SERPINB5 | NM\_002639 | -1.717528718 | 3.28E-05 |
| SERPINI1 | NM\_005025 | -3.703004865 | 3.07E-07 |
| SGK1 | NM\_005627 | 1.471824887 | 1.17E-05 |
| SI | NM\_001041 | -6.033603824 | 2.15E-06 |
| SLC12A1 | NM\_000338 | 1.18698921 | 0.011572959 |
| SLC15A2 | NM\_021082 | 3.68815419 | 0.000869645 |
| SLC16A6 | NM\_004694 | 3.042867402 | 6.45E-08 |
| SLC22A1 | NM\_153187 | 1.213023611 | 9.50E-05 |
| SLC26A2 | NM\_000112 | 1.1138732 | 0.008130955 |
| SLC31A2 | NM\_001860 | 1.396377947 | 9.20E-06 |
| SLC38A2 | NM\_018976 | 1.029259168 | 0.000234869 |
| SLCO1B3 | NM\_019844 | 1.293270757 | 0.025508542 |
|  | | | |
| Gene Name | **RefSeq ID** | **Log2FC** | **P value** |
| SMAD6 | NM\_005585 | -1.896779959 | 0.003075481 |
| SMAD7 | NM\_005904 | -1.457380769 | 2.86E-06 |
| SMARCC2 | NM\_139067 | -1.291139109 | 0.006539983 |
| SMARCD3 | NM\_003078 | -2.81924027 | 1.71E-07 |
| SMS | NM\_004595 | 2.454788777 | 4.56E-07 |
| SNAP25 | NM\_003081 | -2.391316102 | 0.01016724 |
| SNRK | NM\_017719 | -1.413351229 | 4.63E-05 |
| SNTA1 | NM\_003098 | -1.321403179 | 0.006989342 |
| SNX25 | NM\_031953 | 1.440699814 | 1.59E-06 |
| SOCS2 | NM\_003877 | 2.790084682 | 9.83E-07 |
| SORD | NM\_003104 | 1.681422027 | 6.32E-05 |
| SOX4 | NM\_003107 | -1.133258637 | 1.96E-05 |
| SPDEF | NM\_012391 | 1.204458996 | 0.003653186 |
| SREBF1 | NM\_001005291 | -1.085077096 | 0.009967103 |
| SRP19 | NM\_003135 | 1.532528736 | 0.000327893 |
| SSBP2 | ENST00000320672 | -2.93587417 | 1.36E-07 |
| SSR1 | NM\_003144 | 1.268576242 | 9.16E-06 |
| SSR3 | NM\_007107 | 1.844351289 | 5.11E-05 |
| ST13 | NM\_003932 | 1.046656524 | 0.000778757 |
| ST3GAL1 | NM\_003033 | -1.042296428 | 0.000140729 |
| ST6GALNAC1 | NM\_018414 | 6.153320289 | 8.75E-09 |
| ST7 | NM\_018412 | -3.60121681 | 3.08E-07 |
| STK17B | ENST00000263955 | 2.450044492 | 8.60E-07 |
| STK39 | NM\_013233 | 3.048350447 | 3.61E-06 |
| STXBP1 | NM\_003165 | -1.306348349 | 0.005217897 |
| SYNJ1 | NM\_203446 | 1.342421447 | 0.003548156 |
| SYTL2 | NM\_032943 | -2.037397797 | 0.005323263 |
| TARP | NM\_001003799 | 2.276292899 | 0.0006213 |
| TBC1D1 | NM\_015173 | 1.186376436 | 7.24E-05 |
| TBRG1 | NM\_032811 | 1.322944628 | 1.08E-05 |
| TCL1A | NM\_021966 | -1.48365262 | 0.00817251 |
| TFPI | NM\_006287 | -1.022641236 | 0.00052928 |
| THRA | NM\_003250 | -2.482719819 | 3.80E-06 |
| TLE1 | CR612105 | 1.026692517 | 0.003240275 |
| TMPRSS2 | NM\_005656 | 2.763944983 | 1.28E-06 |
| TNFAIP3 | NM\_006290 | 3.135577346 | 1.64E-06 |
| TNFAIP8 | NM\_014350 | 1.634536169 | 7.20E-06 |
| TNRC6B | NM\_015088 | -1.287027334 | 0.00026497 |
| TPD52 | NM\_001025252 | 1.046253429 | 0.000282122 |
| TRIM35 | NM\_171982 | -1.667580485 | 0.026954093 |
|  | | | |
| Gene Name | **RefSeq ID** | **Log2FC** | **P value** |
| TRIM36 | NM\_018700 | 1.185113219 | 1.44E-05 |
| TRIM45 | NM\_025188 | -2.449267061 | 1.45E-07 |
| TRPS1 | NM\_014112 | -2.790446992 | 6.69E-08 |
| TWIST1 | NM\_000474 | 1.057628538 | 5.95E-05 |
| TXNIP | NM\_006472 | -2.016017087 | 1.08E-05 |
| UAP1 | NM\_003115 | 1.571964099 | 1.30E-05 |
| UBE2B | BC001694 | -1.522456144 | 0.013902659 |
| UBE2V1 | NM\_001032288 | 1.059950238 | 0.000941137 |
| UBE2V2 | NM\_003350 | 1.16169537 | 0.009466369 |
| UGT2B15 | NM\_001076 | -6.182288324 | 2.50E-08 |
| VCL | NM\_014000 | 1.043092908 | 0.001033197 |
| WASF3 | NM\_006646 | -1.139624727 | 0.020889696 |
| WWTR1 | NM\_015472 | 3.490604954 | 1.68E-07 |
| XPA | NM\_000380 | -1.125545059 | 0.000117956 |
| XPC | NM\_004628 | -1.245031085 | 0.003188688 |
| ZIC2 | NM\_007129 | 1.215944097 | 0.042301954 |
| ZNF133 | NM\_003434 | -1.077957523 | 6.78E-05 |
| ZNF174 | AF542096 | -1.722461681 | 0.029286019 |
| ZNF76 | NM\_003427 | -1.187623113 | 0.033223379 |

**Supplementary File 1C.** Coregulators considered, prioritized and withheld for analysis

|  |  |  |  |
| --- | --- | --- | --- |
|  | | | |
| Coregulator | **Differential CaP protein expression?** | **Δ expression relevant to  CaP progression?** | **Withheld for oligoarray analysis?** |
| AATF | no | no | no |
| ACTN2 | no | no | no |
| ACTN4 | yes | no | no |
| AES | no | no | no |
| ANP32A | no | no | no |
| APPBP2 | no | no | no |
| APPL1 | no | no | no |
| ARHGDIA | no | no | no |
| ARID1A | no | no | no |
| ARID1B | no | no | no |
| ARID5A | no | no | no |
| ARRB2 | no | no | no |
| ATAD2 | no | no | no |
| BAG1 | yes | yes | yes |
| BRCA1 | no | no | no |
| BRCA2 | no | no | no |
| CALCOCO1 | no | no | no |
| CARM1 | yes | no | no |
| CASP8 | no | no | no |
| CAV1 | yes | yes | yes |
| CBX1 | no | no | no |
| CCND1 | yes | no | no |
| CCNE1 | no | no | no |
| CDC25A | no | no | no |
| CDC25B | yes | no | no |
| CDC37 | yes | no | no |
| CDK6 | no | no | no |
| CHD8 | no | no | no |
| COPS2 | no | no | no |
| CREBBP | yes | no | no |
| CTDSP2 | no | no | no |
| CTNNB1 | yes | yes | yes |
| DCAF6 | no | no | no |
| DDC | yes | no | no |
| DDX17 | no | no | no |
| DDX5 | no | no | no |
| DNAJA1 | no | no | no |
| DNAJB1 | no | no | no |
|  |  |  |  |
| Coregulator | **Differential CaP protein expression?** | **Δ expression relevant to  CaP progression?** | **Withheld for oligoarray analysis?** |
| DYRK1A | no | no | no |
| EFCAB6 | no | no | no |
| EHMT2 | no | no | no |
| EP300 | yes | yes | yes |
| ETV1 | no | no | no |
| FHL2 | yes | yes | yes |
| FKBP4 | no | no | no |
| FKBP5 | no | no | no |
| FKBPL | no | no | no |
| FLNA | no | no | no |
| GAK | yes | yes | no |
| GLI2 | no | no | no |
| GNB2L1 | no | no | no |
| GSK3B | no | no | no |
| GSN | yes | no | no |
| HDAC7 | no | no | no |
| HEY1 | yes | no | no |
| HEY2 | no | no | no |
| HIP1 | yes | yes | no |
| HIPK3 | no | no | no |
| HNRNPA1 | no | no | no |
| HSP90AA1 | yes | no | no |
| HSPA4 | no | no | no |
| HTATIP2 | yes | yes | yes |
| JUND | no | no | no |
| KAT2B | no | no | no |
| KAT5 | yes | yes | yes |
| KDM1A | yes | yes | yes |
| KDM3A | no | no | no |
| KDM4C | no | no | no |
| KDM5B | yes | no | no |
| KHDRBS1 | yes | no | no |
| LATS2 | yes | no | no |
| MACROD1 | no | no | no |
| MAGEA11 | no | no | no |
| MAK | no | no | no |
| MAPK15 | no | no | no |
| MDM2 | no | no | no |
| MED1 | yes | no | no |
| Coregulator | **Differential CaP protein expression?** | **Δ expression relevant to  CaP progression?** | **Withheld for oligoarray analysis?** |
| MKRN1 | no | no | no |
| MYST2 | no | no | no |
| NCOA1 | yes | yes | yes |
| NCOA2 | yes | yes | yes |
| NCOA3 | yes | yes | yes |
| NCOA4 | yes | no | no |
| NCOA6 | no | no | no |
| NCOR1 | no | no | no |
| NCOR2 | no | no | no |
| NELFCD | no | no | no |
| NONO | no | no | no |
| NRIP1 | no | no | no |
| NSD1 | no | no | no |
| PA2G4 | no | no | no |
| PAK6 | yes | no | no |
| PARK7 | yes | yes | yes |
| PATZ1 | no | no | no |
| PAWR | yes | no | no |
| PELP1 | yes | no | no |
| PIAS1 | no | no | no |
| PIAS2 | no | no | no |
| PIAS3 | yes | no | no |
| PIAS4 | no | no | no |
| PKN1 | yes | yes | yes |
| PLAGL1 | no | no | no |
| PNRC1 | no | no | no |
| POU4F1 | no | no | no |
| PPARGC1A | no | no | no |
| PPP1CC | no | no | no |
| PPP2R4 | no | no | no |
| PRDX1 | no | no | no |
| PRIC285 | no | no | no |
| PRKDC | no | no | no |
| PRMT1 | no | no | no |
| PRPF6 | no | no | no |
| PSIP1 | no | no | no |
| PSMC3 | no | no | no |
| PSMC3IP | no | no | no |
| PSPC1 | no | no | no |
| PTEN | no | no | no |
| Coregulator | **Differential CaP protein expression?** | **Δ expression relevant to  CaP progression?** | **Withheld for oligoarray analysis?** |
| PXN | no | no | no |
| RAD54L2 | no | no | no |
| RAD9A | yes | yes | no |
| RAN | no | no | no |
| RANBP9 | no | no | no |
| RB1 | no | no | no |
| RBAK | no | no | no |
| RBM14 | no | no | no |
| RCHY1 | yes | yes | yes |
| RNASEL | no | no | no |
| RNF14 | no | no | no |
| RNF4 | no | no | no |
| RNF6 | no | no | no |
| RPS6KA1 | no | no | no |
| SART3 | no | no | no |
| SENP1 | yes | no | no |
| SFPQ | no | no | no |
| SFRP1 | no | no | no |
| SGTA | yes | no | no |
| SIRT1 | yes | no | no |
| SMAD3 | yes | yes | no |
| SMARCA2 | no | no | no |
| SMARCA4 | yes | yes | yes |
| SMARCC1 | yes | yes | yes |
| SMARCD1 | no | no | no |
| SMARCE1 | yes | no | no |
| SORBS3 | no | no | no |
| SRA1 | no | no | no |
| SRCAP | no | no | no |
| STAT3 | yes | yes | yes |
| STUB1 | no | no | no |
| SUMO1 | no | no | no |
| SUMO2 | no | no | no |
| SUMO3 | no | no | no |
| SVIL | no | no | no |
| TAF1 | no | no | no |
| TAGLN | no | no | no |
| TCF4 | no | no | no |
| TGFB1I1 | yes | no | no |
| TGIF1 | no | no | no |
| Coregulator | **Differential CaP protein expression?** | **Δ expression relevant to  CaP progression?** | **Withheld for oligoarray analysis?** |
| TMF1 | no | no | no |
| TNK2 | no | no | no |
| TOB1 | no | no | no |
| TOB2 | no | no | no |
| TRIM24 | no | no | no |
| TRIM68 | yes | no | no |
| TRIP4 | no | no | no |
| TSG101 | no | no | no |
| UBA3 | no | no | no |
| UBE2I | no | no | no |
| UBE2L3 | no | no | no |
| UBE3A | yes | no | no |
| USP10 | no | no | no |
| USP26 | no | no | no |
| UXT | yes | no | no |
| VAV3 | yes | no | no |
| WDR77 | yes | yes | yes |
| WHSC1 | no | no | no |
| XRCC5 | no | no | no |
| XRCC6 | no | no | no |
| YY1 | no | no | no |
| ZMIZ1 | no | no | no |
| ZMIZ2 | no | no | no |
| ZNF318 | no | no | no |

**Supplementary File 1. Design of oligoarray, overview of AR target genes studied, and overview of coregulators considered for analysis.**

**A. Overview of genes included in custom Agilent oligoarray**

Rows, categories of genes included on 8x15K custom Agilent oligoarray. Columns, Number of genes identified for inclusion on the array, and number of genes for which Agilent catalogue probes were available for inclusion.

**B. Overview of 452 AR target gene signature**

Gene name, HUGO gene symbol ; FC, fold change

**C. Overview of coregulators considered, prioritized and withheld for analysis**

A PudMed search for papers that contain the terms “AR” and “CaP” in their title and/or abstract was performed. Abstracts fulfilling these criteria were screened for reference to coregulator function, and if so, full-length papers were reviewed individually to verify description of a *bona fide* AR-associated coregulator.

Left to right: **Column 1**: 181 coregulators for which literature search was done. **Column 2**: 51 coregulators for which differential protein expression has been reported in CaP when compared to benign prostate (yes entries). **Column 3**: 22 coregulators for which differential expression in CaP correlated with aggressive disease, and were analyzed in Figures 4-6 (yes entries). **Column 4**: 18 coregulators for which siRNA-mediated silencing did not affect AR expression, CaP cell morphology or CaP cell survival and were included in final analyses (yes entries).