## Supplementary Materials

Supplement Table 1. The predicted targets of Sennoside A (SA).

| SYMBOL | ENTREZID | ENSEMBL     | REFSEQ    |
|--------|----------|-------------|-----------|
| CA12   | 771      | ENSG00000074410 | NM_001218 |
| EEA1   | 8411     | ENSG00000102189 | NM_003566 |
| CASP3  | 836      | ENSG00000164305 | NM_001354777 |
| BMP2   | 650      | ENSG00000125845 | NM_001200 |
| TTR    | 7276     | ENSG00000118271 | NM_000371 |
| CDK2   | 1017     | ENSG00000123374 | NM_001290230 |
| GSTP2  | 2950     | ENSG00000084207 | NM_000852 |
| MAPK10 | 5602     | ENSG00000109339 | NM_001318067 |
| CMA1   | 1215     | ENSG00000092009 | NM_001308083 |
| PDE4B  | 5142     | ENSG00000184588 | NM_001037339 |
| FAP    | 2191     | ENSG00000078098 | NM_001291807 |
| PP1A   | 5478     | ENSG00000196262 | NM_001300981 |
| GBA    | 2629     | ENSG00000177628 | NM_000157 |
| GBA    | 2629     | ENSG00000262446 | NM_000157 |
| HSD17B11 | 51170    | ENSG00000198189 | NM_016245 |
| PTPN1  | 5770     | ENSG00000196396 | NM_001278618 |
| CTSD   | 1509     | ENSG00000117984 | NM_001909 |
| BCHE   | 590      | ENSG00000114200 | NM_000055 |
| PNP    | 4860     | ENSG00000198805 | NM_000270 |
| KDR    | 3791     | ENSG00000128052 | NM_002253 |
| ICAM2  | 3384     | ENSG00000108622 | NM_000873 |
| TGFBR2 | 7048     | ENSG00000163513 | NM_001024847 |
| RTN4R  | 65078    | ENSG00000040608 | NM_023004 |
| FCAR   | 2204     | ENSG00000186431 | NM_002000 |
| FCAR   | 2204     | ENSG00000275269 | NM_002000 |
| FCAR   | 2204     | ENSG00000273738 | NM_002000 |
| FCAR   | 2204     | ENSG00000276985 | NM_002000 |
| FCAR   | 2204     | ENSG00000276858 | NM_002000 |
| FCAR   | 2204     | ENSG00000275136 | NM_002000 |
| FCAR   | 2204     | ENSG00000275970 | NM_002000 |
| FCAR   | 2204     | ENSG00000278415 | NM_002000 |
| FCAR   | 2204     | ENSG00000275564 | NM_002000 |
| FCAR   | 2204     | ENSG00000274580 | NM_002000 |
| FCAR   | 2204     | ENSG00000283750 | NM_002000 |
| FCAR   | 2204     | ENSG00000283953 | NM_002000 |
| FCAR   | 2204     | ENSG00000284061 | NM_002000 |
| FCAR   | 2204     | ENSG00000284004 | NM_002000 |
| FCAR   | 2204     | ENSG00000284245 | NM_002000 |
| Gene   | Accession| Entrez| RefSeq   |
|--------|----------|-------|----------|
| MMP8   | ENSG00000118113 | 4317  | NM_001304441 |
| CHEK1  | ENSG00000149554 | 1111  | NM_001114121 |
| SULT2A1| ENSG00000105398 | 6822  | NM_003167 |
| F2     | ENSG00000180210 | 2147  | NM_000506 |
| MMP3   | ENSG00000149968 | 4322  | NM_002427 |
| GC     | ENSG00000145321 | 2638  | NM_0011639 |
| MTAP   | ENSG000001095321 | 1384  | NM_000755 |
| BMP7   | ENSG00000180210 | 2147  | NM_000506 |
| CRAT   | ENSG00000095321 | 325   | NM_001639 |
| MMP13  | ENSG00000137745 | 4322  | NM_002427 |
| CFD    | ENSG00000197766 | 1675  | NM_001317335 |
| CFBR   | ENSG00000274619 | 1675  | NM_001317335 |
| EGFR   | ENSG00000146648 | 1956  | NM_001346897 |
| MAPK14 | ENSG00000112062 | 1432  | NM_001304441 |
| CTSB   | ENSG00000164733 | 1508  | NM_001317237 |
| CTSB   | ENSG00000285132 | 1508  | NM_001317237 |
| AMY2A  | ENSG00000243480 | 279   | NM_000699 |
| BCAT2  | ENSG00000105552 | 587   | NM_001164773 |
| IGLV2-8| ENSG00000278196 | 28817 | NA |
| FABP4  | ENSG00000170323 | 2167  | NM_001442 |
| AZGP1  | ENSG00000160862 | 563   | NM_001185 |
| HSD17B1| ENSG00000108786 | 3292  | NM_000413 |
| ADH1B  | ENSG00000196616 | 125   | NM_000668 |
| F10    | ENSG00000126218 | 2159  | NM_000504 |
| NOS3   | ENSG00000164867 | 4846  | NM_000603 |
| MAOB   | ENSG000000109535 | 4129  | NM_000898 |
| PDE4D  | ENSG00000113448 | 5144  | NM_001104631 |
| GALK1  | ENSG00000108479 | 2584  | NM_000154 |
| PPP5C  | ENSG00000011485 | 5536  | NM_001204284 |
| CFB    | ENSG00000243649 | 629   | NM_001710 |
| CFB    | ENSG00000242335 | 629   | NM_001710 |
| CFB    | ENSG00000204359 | 629   | NM_001710 |
| CFB    | ENSG00000243570 | 629   | NM_001710 |
| CFB    | ENSG00000241534 | 629   | NM_001710 |
| CFB    | ENSG00000239754 | 629   | NM_001710 |
| CFB    | ENSG00000241253 | 629   | NM_001710 |
| CFB    | ENSG00000133275 | 1455  | NM_001319 |
| PYGL   | ENSG00000100504 | 5836  | NM_001163940 |
| SORD   | ENSG00000140263 | 6652  | NM_003104 |
| NMNAT3 | ENSG00000163864 | 349565| NM_00120047 |
| AHCY   | ENSG00000101444 | 191   | NM_001017963 |
| HSP90AA1| ENSG00000080824 | 3320  | NM_001017963 |
| Gene   | Ensembl ID     | RefSeq ID     | Gene Symbol |
|--------|----------------|---------------|-------------|
| REN    | ENSG00000143839| NM_000537     |             |
| HSD11B1| ENSG00000117594| NM_001206741  |             |
| AKR1C3 | ENSG00000196139| NM_001253908  |             |
| KIF11  | ENSG00000138160| NM_0004523    |             |
| KIF5B  | ENSG00000170759| NM_0004521    |             |
| PAH    | ENSG00000171759| NM_000277     |             |
| PDE3B  | ENSG00000152270| NM_000922     |             |
| NCS1   | ENSG00000107130| NM_001128826  |             |
| PDK1   | ENSG00000140992| NM_001261816  |             |
| OTC    | ENSG00000152270| NM_000922     |             |
| DHODH  | ENSG00000102967| NM_001025193  |             |
| ARF1   | ENSG00000143761| NM_001024226  |             |
| C1S    | ENSG00000182326| NM_001346850  |             |
| TGFB1  | ENSG00000106799| NM_0001130916 |             |
| NR3C2  | ENSG00000151623| NM_000901     |             |
| IMPDH2 | ENSG00000178035| NM_000884     |             |
| AKT1   | ENSG00000142208| NM_001014431  |             |
| MMP12  | ENSG00000262406| NM_0004523    |             |
| GALE   | ENSG00000117308| NM_000403     |             |
| FGF1   | ENSG00000113578| NM_000800     |             |
| TGM3   | ENSG00000125780| NM_003245     |             |
| EPHA2  | ENSG00000142627| NM_001329090  |             |
| PARP1  | ENSG00000143799| NM_001618     |             |
| TPI1   | ENSG00000111669| NM_000365     |             |
| ANXA5  | ENSG00000164111| NM_001154     |             |
| PLA2G2A| ENSG00000188257| NM_000300     |             |
| TMY3   | ENSG00000176890| NM_0001701    |             |
| PCK1   | ENSG00000124253| NM_0002591    |             |
| DPP4   | ENSG00000197635| NM_001379604  |             |
| MAPKAPK2| ENSG00000162889| NM_004759     |             |
| TGM2   | ENSG00000198959| NM_001323316  |             |
| CLIC1  | ENSG00000213719| NM_001287593  |             |
| CLIC1  | ENSG00000223639| NM_001287593  |             |
| CLIC1  | ENSG00000226417| NM_001287593  |             |
| CLIC1  | ENSG00000226651| NM_001287593  |             |
| CLIC1  | ENSG00000226248| NM_001287593  |             |
| CLIC1  | ENSG00000230685| NM_001287593  |             |
| CLIC1  | ENSG00000206394| NM_001287593  |             |
| PDE5A  | ENSG00000138735| NM_001083     |             |
| AR     | ENSG00000169083| NM_000044     |             |
| RNASE3 | ENSG00000169397| NM_0002935    |             |
| PLK1   | ENSG00000166851| NM_0005030    |             |
| HMGCRC | ENSG00000113161| NM_000859     |             |
| LGALS2 | ENSG00000100079| NM_006498     |             |
| Gene | NM_001977766 | ENSG000000143179 | NM_001363568 |
|------|--------------|------------------|--------------|
| ABO  | 28           | ENSG00000175164 | NM_020469    |
| ABO  | 28           | ENSG00000281879 | NM_020469    |
| SOD2 | 6648         | ENSG00000112096 | NM_000636    |
| CTSK | 1513         | ENSG00000143387 | NM_000396    |
| RXRA | 6256         | ENSG00000186350 | NM_001291920 |
| PDHB | 5162         | ENSG00000168291 | NM_000925    |
| RHEB | 6009         | ENSG00000106615 | NM_005614    |
| FHT  | 2272         | ENSG00000189283 | NM_001166243 |
| LCK  | 3932         | ENSG00000182866 | NM_001042771 |
| GSK3B| 2932         | ENSG00000082701 | NM_001146156 |
| BAG1 | 573          | ENSG00000107262 | NM_001172415 |
| B3GAT1| 27087       | ENSG00000109956 | NM_001367973 |
| PPARG| 5468         | ENSG00000132170 | NM_001330615 |
| ADH1C| 126          | ENSG00000248144 | NM_000669    |
| MIF  | 4282         | ENSG00000240972 | NM_002415    |
| MIF  | 4282         | ENSG00000276701 | NM_002415    |
| INSR | 3643         | ENSG00000171105 | NM_000208    |
| MTHFD1| 4522        | ENSG00000100714 | NM_001364837 |
| DAPK1| 1612         | ENSG00000196730 | NM_001288729 |
| ISG20| 3669         | ENSG00000172183 | NM_001303233 |
| TYMP | 1890         | ENSG0000025708  | NM_001113755 |
| AKR1C1| 1645        | ENSG00000187134 | NM_001353    |
| F7   | 2155         | ENSG00000057593 | NM_000131    |
| MAPK8| 5599         | ENSG00000107643 | NM_001278547 |
| BST1 | 683          | ENSG00000109743 | NM_004334    |
| SERPINA1| 5265      | ENSG00000197249 | NM_000295    |
| SERPINA1| 5265      | ENSG00000277377 | NM_000295    |
| MMP7 | 4316         | ENSG00000137673 | NM_002423    |
| ACP3 | 55           | ENSG00000014257 | NM_001099    |
| RAC2 | 5880         | ENSG00000128340 | NM_002872    |
| ITK  | 3702         | ENSG00000113263 | NM_005546    |
| YARS1| 8565         | ENSG00000134684 | NM_003680    |
| DCK  | 1633         | ENSG00000156136 | NM_000788    |
| CDA  | 978          | ENSG00000158825 | NM_001785    |
| C1R  | 715          | ENSG00000159403 | NM_001354346 |
| C1R  | 715          | ENSG00000288512 | NM_001354346 |
| XIAP | 331          | ENSG00000101966 | NM_001167    |
| FNTA | 2339         | ENSG00000168522 | NM_001018676 |
| CALM1| 801          | ENSG00000198668 | NM_001166106 |
| HDAC8| 55869        | ENSG00000147099 | NM_001166418 |
| REG1A| 5967         | ENSG00000115386 | NM_002909    |
| HK1  | 3098         | ENSG00000156515 | NM_000188    |
| ALDOA| 226          | ENSG00000149925 | NM_000034    |
| Gene   | Accession   | chromosome | Ensembl | RefSeq |
|--------|-------------|------------|---------|--------|
| FGFR2  | ENSG00000066468 | 12         | NM_000141 |
| NQO2  | ENSG00000124588 | 12         | NM_000904 |
| ATOX1 | ENSG00000177556 | 12         | NM_004045 |
| PAK6  | ENSG00000137843 | 12         | NM_001276717 |
| CAT   | ENSG00000121691 | 12         | NM_001752 |
| CBR1  | ENSG00000159228 | 12         | NM_001286789 |
| DUSP6 | ENSG00000139318 | 12         | NM_001946 |
| NQO1  | ENSG00000181019 | 12         | NM_000903 |
| PRKACA| ENSG00000072062 | 12         | NM_001033059 |
| SELP  | ENSG00000174175 | 12         | NM_003005 |
| TNK2  | ENSG00000061938 | 12         | NM_001010938 |
| GPD1  | ENSG00000105220 | 12         | NM_000175 |
| GPD1  | ENSG00000282019 | 12         | NM_000175 |
| AMD1  | ENSG00000123505 | 12         | NM_001033059 |
| CES1  | ENSG00000198848 | 12         | NM_001025194 |
| CES1  | ENSG00000262243 | 12         | NM_001025194 |
| MET   | ENSG0000015976 | 12         | NM_000245 |
| FGFR1 | ENSG00000077782 | 12         | NM_001174063 |
| ALDH2 | ENSG00000111275 | 12         | NM_000690 |
| GSTA1 | ENSG00000243955 | 12         | NM_001319059 |
| SYK   | ENSG00000165025 | 12         | NM_001135052 |
| CDK7  | ENSG00000134058 | 12         | NM_001324069 |
| CDK7  | ENSG00000277273 | 12         | NM_001324069 |
| RAB11A| ENSG00000103769 | 12         | NM_001206836 |
| GLRX  | ENSG00000173221 | 12         | NM_001118890 |
| PIK3CG| ENSG00000105851 | 12         | NM_001282426 |
| KIT   | ENSG00000157404 | 12         | NM_000222 |
| TTPA  | ENSG00000137561 | 12         | NM_000370 |
| PLEKHA4| ENSG00000105559 | 12         | NM_001161354 |
| PLA2G10| ENSG00000069764 | 12         | NM_003561 |
| PLA2G10| ENSG00000276870 | 12         | NM_003561 |
| DTYMK | ENSG00000168393 | 12         | NM_001165031 |
| MAN1B1| ENSG00000177239 | 12         | NM_016219 |
| ARSA  | ENSG00000100299 | 12         | NM_000487 |
| GSTT2B| ENSG00000133433 | 12         | NM_001080843 |
| GSTT2B| ENSG00000278695 | 12         | NM_001080843 |
| IMPDH1| ENSG00000106348 | 12         | NM_000883 |
| CTSF  | ENSG00000174080 | 12         | NM_003793 |
| CDK6  | ENSG00000105810 | 12         | NM_001145306 |
| CYP2C9| ENSG00000138109 | 12         | NM_000771 |
| ADH5  | ENSG00000197894 | 12         | NM_000671 |
| ADK   | ENSG00000156110 | 12         | NM_001123 |
| PAPSS1| ENSG00000138801 | 12         | NM_005443 |
| Gene   | GeneID | Ensembl ID     | EntrezGeneID | RefSeq ID  |
|--------|--------|----------------|--------------|------------|
| JAK2   | 3717   | ENSG00000096968| NM_001322194 |            |
| PGF    | 5228   | ENSG00000119630| NM_001207012 |            |
| HAGH   | 3029   | ENSG00000063854| NM_001040427 |            |
| PTPN11 | 5781   | ENSG00000179295| NM_001330437 |            |
| ADAM17 | 6868   | ENSG00000151694| NM_001382777 |            |
| MMP9   | 4318   | ENSG00000100985| NM_004994   |            |
| ESR2   | 2100   | ENSG00000140009| NM_001040275 |            |
| C8G    | 733    | ENSG00000176919| NM_000606   |            |
| GNPDA1 | 10007  | ENSG00000113552| NM_005471   |            |
| PDK2   | 5164   | ENSG00000005882| NM_001199898 |            |
| ARF4   | 378    | ENSG00000168374| NM_001660   |            |
| JAK3   | 3718   | ENSG00000105639| NM_000215   |            |
| NR3C1  | 2908   | ENSG00000113580| NM_000176   |            |
| FABP5  | 2171   | ENSG00000164687| NM_001444   |            |
| CTSS   | 1520   | ENSG00000163131| NM_001199739|            |
| RHOA   | 387    | ENSG00000067560| NM_001313941|            |
| NOS2   | 4843   | ENSG00000007171| NM_000625   |            |
| ZAP70  | 7535   | ENSG00000115085| NM_001079   |            |
| FABP3  | 2170   | ENSG00000121769| NM_001320996|            |
| MMP2   | 4313   | ENSG00000087245| NM_001127891|            |
| MAPK12 | 6300   | ENSG00000188130| NM_001303252|            |
| MMP1   | 4312   | ENSG00000196611| NM_001145938|            |
| FABP6  | 2172   | ENSG00000170231| NM_001040442|            |
| LGALS3 | 3958   | ENSG00000131981| NM_001177388|            |
| FECH   | 2235   | ENSG00000066926| NM_000140   |            |
| FDPS   | 2224   | ENSG00000160752| NM_001135821|            |
| PTK2   | 5747   | ENSG00000169398| NM_001199649|            |
| ARHGAP1| 392    | ENSG00000175220| NM_004308   |            |
| IL2    | 3558   | ENSG00000109471| NM_000586   |            |
| RAF1   | 5894   | ENSG00000132155| NM_001354689|            |
| SETD7  | 80854  | ENSG00000145391| NM_001306199|            |
| CCL5   | 6352   | ENSG00000271503| NM_001278736|            |
| CCL5   | 6352   | ENSG00000274233| NM_001278736|            |
| CDC42  | 998    | ENSG00000070831| NM_001039802|            |
| HINT1  | 3094   | ENSG00000169567| NM_005340   |            |
| TEK    | 7010   | ENSG00000120156| NM_000459   |            |
| GSTM1  | 2944   | ENSG00000134184| NM_000561   |            |
| MME    | 4311   | ENSG00000196549| NM_000902   |            |
| NR1I3  | 9970   | ENSG00000143257| NM_001077469|            |
| RAB5A  | 5868   | ENSG00000144566| NM_001292048|            |
| PRKCCQ | 5588   | ENSG00000065675| NM_001242413|            |
| LYZ    | 4069   | ENSG00000090382| NM_000239   |            |
| PADI4  | 23569  | ENSG00000159339| NM_012387   |            |
| PADI4  | 23569  | ENSG00000280908| NM_012387   |            |
| Gene   | Species | EntrezGene | EnsemblGene | EntrezID | EnsemblID |
|--------|---------|------------|-------------|----------|-----------|
| ELANE  | 1991    | ENSG000000197561 | NM_001972  |          |           |
| ELANE  | 1991    | ENSG000000277571 | NM_001972  |          |           |
| SULT2B1| 6820    | ENSG000000088002 | NM_004605  |          |           |
| GP1BA  | 2811    | ENSG00000185245 | NM_000173  |          |           |
| GART   | 2618    | ENSG00000159131 | NM_000819  |          |           |
| GART   | 2618    | ENSG00000262473 | NM_000819  |          |           |
| HEB    | 3074    | ENSG00000049860 | NM_000521  |          |           |
| CTNNA1 | 1495    | ENSG00000044115 | NM_001290307 |        |           |
| TPH1   | 7166    | ENSG00000129167 | NM_004179  |          |           |
| PPARA  | 5465    | ENSG00000186951 | NM_001001928 |        |           |
| MDM2   | 4193    | ENSG00000135679 | NM_001145336 |        |           |
| SELE   | 6401    | ENSG00000007908 | NM_000450  |          |           |
| SRM    | 6723    | ENSG00000116649 | NM_003132  |          |           |
| NMNAT1 | 64802   | ENSG000000173614 | NM_001297778 |        |           |
| EPHX2  | 2053    | ENSG00000120915 | NM_001256482 |        |           |
| BIRC7  | 79444   | ENSG00000101197 | NM_022161  |          |           |
| NR1H4  | 9971    | ENSG00000012504 | NM_001206977 |        |           |
| GSTA3  | 2940    | ENSG00000174156 | NM_000847  |          |           |
| S100A9 | 6280    | ENSG00000163220 | NM_002965  |          |           |
| ACAT1  | 38      | ENSG00000075239 | NM_000019  |          |           |
| GCDH   | 2639    | ENSG00000105607 | NM_000159  |          |           |
| CSK    | 1445    | ENSG00000103653 | NM_001127190 |        |           |
| BHMT   | 635     | ENSG00000145692 | NM_001713  |          |           |
| AGXT   | 189     | ENSG00000172482 | NM_000030  |          |           |
| KAT2B  | 8850    | ENSG000000114616 | NM_003884  |          |           |
| HRAS   | 3265    | ENSG00000174775 | NM_001130442 |        |           |
| HRAS   | 3265    | ENSG000000276536 | NM_001130442 |        |           |
Supplement Table 2. The possible targets of chondrosarcoma.

| SYMBOL | ENTREZID | ENSEMBL     | REFSEQ     |
|--------|----------|-------------|------------|
| EXT1   | 2131     | ENSG00000182197 | NM_000127  |
| NR4A3  | 8013     | ENSG00000119508 | NM_006981  |
| TAF15  | 8148     | ENSG00000270647 | NM_003487  |
| TAF15  | 8148     | ENSG00000276833 | NM_003487  |
| EWSR1  | 2130     | ENSG00000182944 | NM_001163285 |
| TFG    | 10342    | ENSG00000114354 | NM_001007565 |
| CSAG1  | 158511   | ENSG00000198930 | NM_001102576 |
| CSAG2  | 102723547| ENSG00000268902 | XM_006724857 |
| PTH1R  | 5745     | ENSG00000160801 | NM_000316  |
| SOX9   | 6662     | ENSG00000125398 | NM_000346  |
| MMP1   | 4312     | ENSG00000196611 | NM_001145938 |
| SYP    | 6855     | ENSG00000102003 | NM_003179  |
| S100B  | 6285     | ENSG00000160307 | NM_006272  |
| ENO2   | 2026     | ENSG00000111674 | NM_001975  |
| RUNX2  | 860      | ENSG00000124813 | NM_001015051 |
| VIM    | 7431     | ENSG00000026025 | NM_003380  |
| CNMD   | 11061    | ENSG00000136110 | NM_001011705 |
| SMARCB1| 6598     | ENSG00000099956 | NM_001007468 |
| SMARCB1| 6598     | ENSG00000275837 | NM_001007468 |
| MTAP   | 4507     | ENSG00000099810 | NM_002451  |
| PTHLH  | 5744     | ENSG00000087494 | NM_002820  |
| CDK4   | 1019     | ENSG00000135446 | NM_000075  |
| SPARC  | 6678     | ENSG00000113140 | NM_001309443 |
| S100A1 | 6271     | ENSG00000160678 | NM_006271  |
| FGF2   | 2247     | ENSG00000138685 | NM_001361665 |
| PDGFRA | 5156     | ENSG00000134853 | NM_001347827 |
| PLAU   | 5328     | ENSG00000122861 | NM_001145031 |
| BMP2   | 650      | ENSG00000125845 | NM_001200  |
| MET    | 4233     | ENSG00000105976 | NM_000245  |
| MMP3   | 4314     | ENSG00000149968 | NM_002422  |
| MDM2   | 4193     | ENSG00000135679 | NM_001145336 |
| MYOG   | 4656     | ENSG00000122180 | NM_002479  |
| GFAP   | 2670     | ENSG00000131095 | NM_001131019 |
| SERPINA3| 12       | ENSG00000196136 | NM_001085  |
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| NKX3-1 | 4824       | ENSG00000167034 | NM_001256339  |
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| CD34  | 947   | ENSG00000174059 | NM_001025109 |
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| EGFR | 1956 | ENSG00000146648   | NM_001346897 |             |
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| IL6 | 3569 | ENSG00000163159   | NM_001127208 |             |
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| PPARγ | 5468 | ENSG00000132170   | NM_001330305 |             |
| RB1 | 5925 | ENSG00000139687   | NM_000321 |             |
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| CXCL12 | 6387 | ENSG00000107562  | NM_000609 |             |
| ADAMTS16 | 170690 | ENSG00000145536 | NM_139056 |             |
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| IGF2  | ENSG00000167244  | NM_000612        |             |
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| GLI1  | ENSG00000111087  | NM_001160045     |             |
| ZBTB7A| ENSG00000178951  | NM_001317990     |             |
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| TGFBR1| ENSG00000106799  | NM_001130916     |             |
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| MMP19 | ENSG00000123342  | NM_001032360     |             |
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| ABCB1  | 5243  | ENSG00000085563 | NM_000927    |
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| MMP8   | 4317  | ENSG00000118113 | NM_001304441 |
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| HDAC6  | 10013     | ENSG00000094631 | NM_001321225 |
| CASP9  | 842       | ENSG00000132906 | NM_001229 |
| AMACR  | 23600     | ENSG00000242110 | NM_001167595 |
| CCR7   | 1236      | ENSG00000126353 | NM_001301714 |
| AGER   | 177       | ENSG00000204305 | NM_001136 |
| AGER   | 177       | ENSG00000231268 | NM_001136 |
| AGER   | 177       | ENSG00000229058 | NM_001136 |
| AGER   | 177       | ENSG00000237405 | NM_001136 |
| AGER   | 177       | ENSG00000230514 | NM_001136 |
| AGER   | 177       | ENSG00000206320 | NM_001136 |
| AGER   | 177       | ENSG00000234729 | NM_001136 |
| XRCC5  | 7520      | ENSG00000079246 | NM_021141 |
| SNAI2  | 6591      | ENSG0000019549  | NM_003068 |
| CCL21  | 6366      | ENSG00000137077 | NM_002989 |
| PTGER1 | 5731      | ENSG00000160951 | NM_000955 |
| TNFRSF8| 943       | ENSG00000120949 | NM_001243 |
| RGS16  | 6004      | ENSG00000143333 | NM_002928 |
| MIR101-1| 406893   | ENSG00000199135 | NR_029516 |
| CD36   | 948       | ENSG00000135218 | NM_000072 |
| FGFI1  | 2246      | ENSG00000113578 | NM_000800 |
| TIMP1  | 7076      | ENSG00000102265 | NM_003254 |
| HGF    | 3082      | ENSG00000199991 | NM_000601 |
| SERPINE1| 5054     | ENSG00000106366 | NM_000602 |
| EIF2AK3| 9451      | ENSG00000172071 | NM_001313915 |
| PLAT   | 5327      | ENSG00000104368 | NM_000930 |
| FLI1   | 2313      | ENSG00000151702 | NM_001167681 |
| MAP3K5 | 4217      | ENSG00000197442 | NM_005923 |
| SETD2  | 29072     | ENSG00000181555 | NM_001349370 |
| MYH11  | 4629      | ENSG00000133392 | NM_001040113 |
| MYH11  | 4629      | ENSG00000276480 | NM_001040113 |
| NCOA3  | 8202      | ENSG00000124151 | NM_001174087 |
| ADIPOQ | 9370      | ENSG00000181092 | NM_001177800 |
| KRT19  | 3880      | ENSG00000171345 | NM_002276 |
| THBS1  | 7057      | ENSG00000137801 | NM_003246 |
| NCOA1  | 8648      | ENSG00000084676 | NM_001362950 |
| POSTN  | 10631     | ENSG00000133110 | NM_001135934 |
| Gene   | Chromosome | Ensembl ID | Entrez ID | Reference Entrez ID |
|--------|------------|------------|-----------|---------------------|
| MCM6   | 4175       | ENSG00000076003 | NM_005915 |
| IGF2BP3| 10643      | ENSG00000136231 | NM_006547 |
| ATG12  | 9140       | ENSG00000145782 | NM_001277783 |
| MAGEA3 | 4102       | ENSG00000221867 | NM_005362 |
| MIR100 | 406892     | ENSG00000207994 | NR_029515 |
| MIR200B| 406984     | ENSG00000207730 | NR_029639 |
| MIR199A2| 406977    | ENSG00000208024 | NR_029618 |
| MIR129-2| 406918     | ENSG00000199077 | NR_029697 |
| MIR454 | 768216     | ENSG00000211514 | NR_030411 |
| MIR129-1| 406917     | ENSG00000207705 | NR_029596 |
| MIR519D| 574480     | ENSG00000207981 | NR_030202 |
| PTPN11 | 5781       | ENSG00000179295 | NM_001330437 |
| HSP90AA1| 3320       | ENSG00000080824 | NM_001017963 |
| ACP5   | 54         | ENSG00000102575 | NM_001111034 |
| PTH    | 5741       | ENSG00000152266 | NM_000315 |
| TDP1   | 55775      | ENSG00000042088 | NM_001008744 |
| GSTA3  | 2940       | ENSG00000174156 | NM_000847 |
| UBE2R2 | 54926      | ENSG00000107341 | NM_017811 |
| PTGR1  | 22949      | ENSG00000106853 | NM_001146108 |
| MAML3  | 55534      | ENSG00000196782 | NM_018717 |
| RCN3   | 57333      | ENSG00000142552 | NM_020650 |
| IL10   | 3586       | ENSG00000136634 | NM_000572 |
| BMP6   | 654        | ENSG00000153162 | NM_001718 |
| CAPN1  | 823        | ENSG0000014216  | NM_001198868 |
| DAPK1  | 1612       | ENSG00000196730 | NM_001288729 |
| CAPN2  | 824        | ENSG00000162909 | NM_001146068 |
| CD4OLG | 959        | ENSG00000102245 | NM_000074 |
| HSPD1  | 3329       | ENSG00000144381 | NM_002156 |
| CRP    | 1401       | ENSG00000132693 | NM_000567 |
| VEGFB  | 7423       | ENSG00000173511 | NM_001243733 |
| KLF6   | 1316       | ENSG00000067082 | NM_001008490 |
| FHIT   | 2272       | ENSG00000189283 | NM_001166243 |
| RPS6   | 6194       | ENSG00000137154 | NM_001010 |
| MUC5B  | 727897     | ENSG00000117983 | NM_002458 |
| PFFIBP1| 8496       | ENSG00000110841 | NM_001198915 |
| CCL3   | 6348       | ENSG00000277632 | NM_002983 |
| CCL3   | 6348       | ENSG00000278567 | NM_002983 |
| CCL3   | 6348       | ENSG00000274221 | NM_002983 |
| ETV5   | 2119       | ENSG00000244405 | NM_004454 |
| VEGFD  | 2277       | ENSG00000165197 | NM_004469 |
| CCN1   | 3491       | ENSG00000142871 | NM_001554 |
| SNHG6  | 641638     | ENSG00000245910 | NR_002599 |
| MIR624 | 693209     | ENSG00000207952 | NR_030354 |
| CDK2   | 1017       | ENSG00000123374 | NM_001290230 |
| Gene       | ENSG ID       | NM ID        | Gencode | Refseq |
|------------|---------------|--------------|---------|--------|
| CHUK       | ENSG00000213341 | NM_001278    |         |        |
| MIF        | ENSG00000240972 | NM_002415    |         |        |
| MIF        | ENSG00000276701 | NM_002415    |         |        |
| IRS1       | ENSG00000169047 | NM_005544    |         |        |
| GATA1      | ENSG00000102145 | NM_002049    |         |        |
| CCNB1      | ENSG00000134057 | NM_001354844 |         |        |
| SPP1       | ENSG00000118785 | NM_000582    |         |        |
| MIF        | ENSG00000240972 | NM_002415    |         |        |
| IRS1       | ENSG00000169047 | NM_005544    |         |        |
| GATA1      | ENSG00000102145 | NM_002049    |         |        |
| CCNB1      | ENSG00000134057 | NM_001354844 |         |        |
| SPP1       | ENSG00000118785 | NM_000582    |         |        |
| IRS1       | ENSG00000169047 | NM_005544    |         |        |
| GATA1      | ENSG00000102145 | NM_002049    |         |        |
| CCNB1      | ENSG00000134057 | NM_001354844 |         |        |
| SPP1       | ENSG00000118785 | NM_000582    |         |        |
| IRS1       | ENSG00000169047 | NM_005544    |         |        |
| GATA1      | ENSG00000102145 | NM_002049    |         |        |
| CCNB1      | ENSG00000134057 | NM_001354844 |         |        |
| SPP1       | ENSG00000118785 | NM_000582    |         |        |
| IRS1       | ENSG00000169047 | NM_005544    |         |        |
| GATA1      | ENSG00000102145 | NM_002049    |         |        |
| CCNB1      | ENSG00000134057 | NM_001354844 |         |        |
| SPP1       | ENSG00000118785 | NM_000582    |         |        |
| IRS1       | ENSG00000169047 | NM_005544    |         |        |
| GATA1      | ENSG00000102145 | NM_002049    |         |        |
| CCNB1      | ENSG00000134057 | NM_001354844 |         |        |
| SPP1       | ENSG00000118785 | NM_000582    |         |        |
| IRS1       | ENSG00000169047 | NM_005544    |         |        |
| GATA1      | ENSG00000102145 | NM_002049    |         |        |
| CCNB1      | ENSG00000134057 | NM_001354844 |         |        |
| SPP1       | ENSG00000118785 | NM_000582    |         |        |
| IRS1       | ENSG00000169047 | NM_005544    |         |        |
| GATA1      | ENSG00000102145 | NM_002049    |         |        |
| CCNB1      | ENSG00000134057 | NM_001354844 |         |        |
| SPP1       | ENSG00000118785 | NM_000582    |         |        |
| IRS1       | ENSG00000169047 | NM_005544    |         |        |
| GATA1      | ENSG00000102145 | NM_002049    |         |        |
| CCNB1      | ENSG00000134057 | NM_001354844 |         |        |
| SPP1       | ENSG00000118785 | NM_000582    |         |        |
| IRS1       | ENSG00000169047 | NM_005544    |         |        |
| GATA1      | ENSG00000102145 | NM_002049    |         |        |
| CCNB1      | ENSG00000134057 | NM_001354844 |         |        |
| SPP1       | ENSG00000118785 | NM_000582    |         |        |
| IRS1       | ENSG00000169047 | NM_005544    |         |        |
| GATA1      | ENSG00000102145 | NM_002049    |         |        |
| CCNB1      | ENSG00000134057 | NM_001354844 |         |        |
| SPP1       | ENSG00000118785 | NM_000582    |         |        |
| IRS1       | ENSG00000169047 | NM_005544    |         |        |
| GATA1      | ENSG00000102145 | NM_002049    |         |        |
| CCNB1      | ENSG00000134057 | NM_001354844 |         |        |
| SPP1       | ENSG00000118785 | NM_000582    |         |        |
| IRS1       | ENSG00000169047 | NM_005544    |         |        |
| GATA1      | ENSG00000102145 | NM_002049    |         |        |
| CCNB1      | ENSG00000134057 | NM_001354844 |         |        |
| SPP1       | ENSG00000118785 | NM_000582    |         |        |
| IRS1       | ENSG00000169047 | NM_005544    |         |        |
| GATA1      | ENSG00000102145 | NM_002049    |         |        |
| CCNB1      | ENSG00000134057 | NM_001354844 |         |        |
| SPP1       | ENSG00000118785 | NM_000582    |         |        |
| IRS1       | ENSG00000169047 | NM_005544    |         |        |
| GATA1      | ENSG00000102145 | NM_002049    |         |        |
| CCNB1      | ENSG00000134057 | NM_001354844 |         |        |
| SPP1       | ENSG00000118785 | NM_000582    |         |        |
| IRS1       | ENSG00000169047 | NM_005544    |         |        |
| GATA1      | ENSG00000102145 | NM_002049    |         |        |
| CCNB1      | ENSG00000134057 | NM_001354844 |         |        |
| SPP1       | ENSG00000118785 | NM_000582    |         |        |
|   |   |   |   |   |
|---|---|---|---|---|
| CDC37 | 11140 | ENSG00000105401 | NM_007065 |
| FERMT2 | 10979 | ENSG00000073712 | NM_001134999 |
| PARVB | 29780 | ENSG00000188677 | NM_001003828 |
| FBLIM1 | 54751 | ENSG00000162458 | NM_001024215 |
| MIR518B | 574474 | ENSG00000207862 | NR_030196 |
Supplement Table 3. The potential targets associated with SA against chondrosarcoma.

| SYMBOL | ENTREZID | ENSEMBL   | REFSEQ        |
|--------|----------|-----------|---------------|
| CASP3  | 836      | ENSG00000164305 | NM_001354777 |
| BMP2   | 650      | ENSG00000125845 | NM_001200    |
| CDK2   | 1017     | ENSG00000123374 | NM_001290230 |
| MAPK10 | 5602     | ENSG00000109339 | NM_001318067 |
| CTSD   | 1509     | ENSG00000117984 | NM_001909    |
| TGFB2  | 7048     | ENSG00000163513 | NM_001024847 |
| PLAU   | 5328     | ENSG00000122861 | NM_001145031 |
| IGF1R  | 3480     | ENSG00000140443 | NM_000875    |
| SRC    | 6714     | ENSG00000197122 | NM_005417    |
| MAPK1  | 5594     | ENSG00000100030 | NM_002745    |
| MMP8   | 4317     | ENSG00000118113 | NM_001304441 |
| MMP3   | 4314     | ENSG00000149968 | NM_002422    |
| MTAP   | 4507     | ENSG00000099810 | NM_002451    |
| MMP13  | 4322     | ENSG00000137745 | NM_002427    |
| EGFR   | 1956     | ENSG00000146648 | NM_001346897 |
| MAPK14 | 1432     | ENSG00000112062 | NM_001315    |
| CTSB   | 1508     | ENSG00000164733 | NM_001317237 |
| CTSB   | 1508     | ENSG000000285132 | NM_001317237 |
| HSP90AA1 | 3320   | ENSG00000080824 | NM_001017963 |
| TGFB1  | 7046     | ENSG00000106799 | NM_001130916 |
| AKT1   | 207      | ENSG00000142208 | NM_001014431 |
| MMP12  | 4321     | ENSG00000262406 | NM_002426    |
| FGFR1  | 2246     | ENSG00000113578 | NM_000800    |
| PPARP  | 142      | ENSG00000143799 | NM_001618    |
| CTSK   | 1513     | ENSG00000143387 | NM_000396    |
| FHIT   | 2272     | ENSG00000189283 | NM_001166243 |
| PPARG  | 5468     | ENSG00000132170 | NM_001330615 |
| MIF    | 4282     | ENSG000000240972 | NM_002415   |
| MIF    | 4282     | ENSG00000276701 | NM_002415    |
| DAPK1  | 1612     | ENSG00000196730 | NM_001288729 |
| ISG20  | 3669     | ENSG00000172183 | NM_001303233 |
| MMP7   | 4316     | ENSG00000137673 | NM_002423    |
| XIAP   | 331      | ENSG00000101966 | NM_001167    |
| MET    | 4233     | ENSG00000105976 | NM_000245    |
| FGFR1  | 2260     | ENSG00000077782 | NM_001174063 |
| PIK3CG | 5294     | ENSG00000105851 | NM_001282426 |
| KIT    | 3815     | ENSG00000157404 | NM_000222    |
| PTPN11 | 5781     | ENSG00000179295 | NM_001330437 |
| MMP9   | 4318     | ENSG00000100985 | NM_004994    |
| ESR2   | 2100     | ENSG00000140009 | NM_00104275  |
| NOS2   | 4843     | ENSG00000007171 | NM_000625    |
| Gene  | Entrez ID | Ensembl ID    | Entrez ID | Ensembl ID    |
|-------|-----------|---------------|-----------|---------------|
| MMP2  | 4313      | ENSG00000087245 | NM_001127891 |
| MMP1  | 4312      | ENSG00000196611 | NM_001145938 |
| PTK2  | 5747      | ENSG00000169398 | NM_001199649 |
| RAF1  | 5894      | ENSG00000132155 | NM_001354689 |
| CCL5  | 6352      | ENSG00000271503 | NM_001278736 |
| CCL5  | 6352      | ENSG00000274233 | NM_001278736 |
| MDM2  | 4193      | ENSG00000135679 | NM_001145336 |
| GSTA3 | 2940      | ENSG00000174156 | NM_000847    |
| HRAS  | 3265      | ENSG00000174775 | NM_001130442 |
| HRAS  | 3265      | ENSG00000276536 | NM_001130442 |