

Table S4 Gene IDs and relative transcript levels of *DoAP2/ERF* of two cultivars of *D. officinale* flower

| Gene ID        | Gene Name | Wanhu No.5-1 | Wanhu No.5-2 | Wanhu No.5-3 | Wanhu No.6-1 | Wanhu No.6-2 | Wanhu No.6-3 |
|----------------|-----------|--------------|--------------|--------------|--------------|--------------|--------------|
| MA16_Dca000204 | AP2/ERF01 | 0.813882413  | 0.899224633  | 2.859441027  | 1.641746068  | 0.556165903  | 2.203114501  |
| MA16_Dca000285 | AP2/ERF02 | 0            | 0            | 0            | 0            | 0            | 0            |
| MA16_Dca000925 | AP2/ERF03 | 0.157224161  | 0.146568149  | 1.242857346  | 0.285434271  | 2.236074311  | 0.820786905  |
| MA16_Dca001584 | AP2/ERF04 | 0.11443971   | 0            | 0.681762328  | 0.092338127  | 0.234606856  | 0.75232074   |
| MA16_Dca001811 | AP2/ERF05 | 0.34950506   | 0.108605678  | 0.240246808  | 0.846016893  | 0.671720643  | 0.405463801  |
| MA16_Dca001859 | AP2/ERF06 | 24.8799762   | 26.95237787  | 8.382147179  | 11.12849977  | 13.83489118  | 7.928898593  |
| MA16_Dca001938 | AP2/ERF07 | 0.608073067  | 0.554263459  | 2.452174314  | 1.22659189   | 0.186986812  | 0.987603052  |
| MA16_Dca002039 | AP2/ERF08 | 23.67698611  | 25.71782451  | 24.22975743  | 35.56236369  | 33.98546356  | 45.93445064  |
| MA16_Dca002334 | AP2/ERF09 | 2.570518869  | 2.506898032  | 0.761148908  | 1.579490254  | 0.972865127  | 1.192832345  |
| MA16_Dca002515 | AP2/ERF10 | 0            | 0.132840003  | 0.587711199  | 0            | 1.478895697  | 0.743908792  |
| MA16_Dca002518 | AP2/ERF11 | 0            | 0            | 3.07891719   | 0.0874375    | 1.11077827   | 1.2571643    |
| MA16_Dca003321 | AP2/ERF12 | 61.92752085  | 61.09980047  | 54.77030331  | 54.43934788  | 46.43467124  | 44.8201197   |
| MA16_Dca003385 | AP2/ERF13 | 10.00226421  | 9.11933063   | 1.451286839  | 1.437365435  | 1.825983462  | 2.173782461  |
| MA16_Dca003422 | AP2/ERF14 | 0            | 0.073062001  | 0            | 0            | 0.180753919  | 0.068191639  |
| MA16_Dca003553 | AP2/ERF15 | 108.8277056  | 119.5607467  | 51.25681244  | 106.8151263  | 96.44512651  | 111.0549554  |
| MA16_Dca003726 | AP2/ERF16 | 0.795796137  | 1.137519161  | 1.066695827  | 1.179868174  | 0.825906366  | 0.877049392  |
| MA16_Dca003949 | AP2/ERF17 | 19.90608035  | 25.94658793  | 14.58217141  | 10.19973175  | 15.56379246  | 10.50713124  |
| MA16_Dca003950 | AP2/ERF18 | 6.979005809  | 5.613017254  | 9.947361874  | 8.695173619  | 6.627643678  | 8.334533693  |
| MA16_Dca004012 | AP2/ERF19 | 8.575750481  | 10.21945132  | 3.630508603  | 3.196162766  | 4.60446824   | 3.095182618  |
| MA16_Dca004231 | AP2/ERF20 | 0.087970661  | 0.218688984  | 0            | 0.319414541  | 1.082064274  | 0.714388602  |
| MA16_Dca004232 | AP2/ERF21 | 69.33799614  | 76.67814409  | 53.74984807  | 93.48157475  | 101.7356199  | 95.20826465  |
| MA16_Dca004258 | AP2/ERF22 | 23.5937314   | 21.51899602  | 11.02977997  | 18.78157502  | 10.71243631  | 16.59422668  |
| MA16_Dca004554 | AP2/ERF23 | 0            | 0            | 0            | 0            | 0            | 0            |
| MA16_Dca004576 | AP2/ERF24 | 6.984998944  | 6.218269613  | 16.86988533  | 12.62386885  | 12.04586333  | 13.63335037  |
| MA16_Dca004577 | AP2/ERF25 | 3.870066982  | 3.226460648  | 2.141177754  | 2.856078926  | 3.845968412  | 2.190096445  |
| MA16_Dca004580 | AP2/ERF26 | 7.243891189  | 6.936342711  | 12.39314653  | 9.936310435  | 10.97273787  | 11.20493326  |
| MA16_Dca004865 | AP2/ERF27 | 17.29151322  | 17.77285372  | 10.61616323  | 31.03431682  | 33.00566552  | 24.73213341  |
| MA16_Dca005005 | AP2/ERF28 | 109.1913988  | 120.1265106  | 91.18718738  | 76.18354105  | 108.5660705  | 66.9632866   |
| MA16_Dca005355 | AP2/ERF29 | 0.598689224  | 0.347270007  | 0.823067767  | 0.772904322  | 0.613670711  | 0.601938544  |
| MA16_Dca005447 | AP2/ERF30 | 3.51441632   | 4.368298029  | 0.703625215  | 1.321482851  | 1.993539259  | 1.029171971  |
| MA16_Dca005472 | AP2/ERF31 | 0            | 0            | 0            | 0.120859556  | 0.383840367  | 0.1158468    |
| MA16_Dca005593 | AP2/ERF32 | 0            | 0            | 0            | 0            | 0            | 0            |
| MA16_Dca005811 | AP2/ERF33 | 130.9589914  | 126.5905482  | 204.403001   | 152.7866222  | 172.371336   | 127.7961833  |
| MA16_Dca005958 | AP2/ERF34 | 0.508549498  | 0.632109451  | 0.599267318  | 0.615501054  | 0.893614878  | 0.168563603  |
| MA16_Dca006007 | AP2/ERF35 | 0.226871706  | 0.140996845  | 0.623798729  | 0.068646108  | 0.348823351  | 0.06579895   |
| MA16_Dca006176 | AP2/ERF36 | 0.075623902  | 0            | 0.727765184  | 0.27458443   | 0            | 0.350927734  |
| MA16_Dca006212 | AP2/ERF37 | 62.85521285  | 65.83148306  | 22.09887768  | 24.19406078  | 38.65685396  | 18.58833451  |
| MA16_Dca006263 | AP2/ERF38 | 2.125756806  | 3.082615952  | 1.2176893    | 0.536003853  | 0.408553377  | 0.513772625  |
| MA16_Dca006394 | AP2/ERF39 | 18.79135801  | 18.33399599  | 17.13009791  | 29.75379723  | 16.87977999  | 28.91041375  |
| MA16_Dca006431 | AP2/ERF40 | 0.753302169  | 1.248438083  | 0.086302251  | 0.075977245  | 0.579114496  | 0.145652045  |
| MA16_Dca006653 | AP2/ERF41 | 18.91721104  | 21.95200021  | 7.212895589  | 26.02589681  | 31.69907291  | 20.31721185  |
| MA16_Dca007398 | AP2/ERF42 | 4.103782665  | 3.380802576  | 4.198556759  | 3.754004847  | 4.402124952  | 4.650116215  |
| MA16_Dca007407 | AP2/ERF43 | 30.31097788  | 35.63145123  | 62.8405104   | 45.4159473   | 39.19121088  | 59.44497759  |
| MA16_Dca007470 | AP2/ERF44 | 56.38460784  | 61.7806744   | 55.01993481  | 59.93488394  | 45.98516751  | 61.78614978  |
| MA16_Dca008681 | AP2/ERF45 | 1.296493065  | 0.661126594  | 0.137107433  | 1.609389462  | 1.533387998  | 1.388374764  |

|                |           |             |             |             |             |             |             |
|----------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|
| MA16_Dca008693 | AP2/ERF46 | 0           | 0           | 0           | 0           | 0           | 0           |
| MA16_Dca009059 | AP2/ERF47 | 8.588956446 | 6.417460874 | 8.424774252 | 7.475253738 | 7.5673842   | 5.541842926 |
| MA16_Dca009728 | AP2/ERF48 | 82.54339178 | 86.1530593  | 55.20859291 | 87.83242987 | 100.9480432 | 79.52302122 |
| MA16_Dca009859 | AP2/ERF49 | 1.873281796 | 1.201767501 | 0.415379995 | 0.511958821 | 0.278732678 | 0.140207109 |
| MA16_Dca011128 | AP2/ERF50 | 0.141219673 | 0.225682937 | 0           | 0           | 0           | 0           |
| MA16_Dca011474 | AP2/ERF51 | 0.082367435 | 0           | 0           | 0           | 0           | 0           |
| MA16_Dca011493 | AP2/ERF52 | 14.74454058 | 14.42121001 | 29.74120762 | 20.99031164 | 24.99303013 | 23.48469073 |
| MA16_Dca012028 | AP2/ERF53 | 19.27810894 | 18.44863731 | 18.05971386 | 19.73965008 | 19.20093076 | 20.74177356 |
| MA16_Dca012097 | AP2/ERF54 | 0           | 0           | 0           | 0.094285015 | 0           | 0           |
| MA16_Dca012098 | AP2/ERF55 | 0.635984618 | 0.790506901 | 1.360085753 | 0.513157787 | 3.042197098 | 1.393643339 |
| MA16_Dca012187 | AP2/ERF56 | 0           | 0           | 1.143909734 | 0.587448727 | 0.746276232 | 0.241321619 |
| MA16_Dca012503 | AP2/ERF57 | 117.0757121 | 110.2526882 | 99.24758904 | 90.86878528 | 125.9574029 | 86.00753264 |
| MA16_Dca012658 | AP2/ERF58 | 2.469712151 | 2.686045995 | 0.84882957  | 0.871823774 | 0.685618312 | 0.437728825 |
| MA16_Dca012727 | AP2/ERF59 | 0           | 0           | 0.194297965 | 0           | 0           | 0           |
| MA16_Dca012732 | AP2/ERF60 | 0.136843251 | 0.170091432 | 0           | 0           | 0.210401387 | 0           |
| MA16_Dca012809 | AP2/ERF61 | 0.232305759 | 0.144374015 | 6.227715155 | 0.468602171 | 7.20309777  | 6.692580648 |
| MA16_Dca012817 | AP2/ERF62 | 0           | 0.193658317 | 0           | 0           | 0           | 0.060249641 |
| MA16_Dca012912 | AP2/ERF63 | 0.048983664 | 0.121770002 | 0           | 0.948564395 | 0.979083725 | 0.738742759 |
| MA16_Dca013018 | AP2/ERF64 | 1.006658288 | 1.539989492 | 9.3681869   | 0.65604304  | 3.214605616 | 1.886499243 |
| MA16_Dca013083 | AP2/ERF65 | 0.769170988 | 0.657286407 | 0.594811799 | 2.21096608  | 0.443485451 | 1.115402279 |
| MA16_Dca013337 | AP2/ERF66 | 5.580479138 | 4.035083981 | 3.688436468 | 2.760086232 | 3.341322435 | 3.921726642 |
| MA16_Dca013671 | AP2/ERF67 | 92.33224685 | 95.07558249 | 95.91373307 | 76.14363538 | 85.49660345 | 74.93579243 |
| MA16_Dca014041 | AP2/ERF68 | 736.4015612 | 769.8861569 | 276.1898863 | 257.2935317 | 275.5570314 | 263.6437398 |
| MA16_Dca014263 | AP2/ERF69 | 0           | 0           | 0           | 0           | 0           | 0           |
| MA16_Dca014264 | AP2/ERF70 | 0           | 0           | 0           | 0           | 0           | 0           |
| MA16_Dca014326 | AP2/ERF71 | 0.813313663 | 1.718565317 | 1.956727145 | 0.196871856 | 2.250897853 | 1.179415145 |
| MA16_Dca014404 | AP2/ERF72 | 101.1474977 | 111.447653  | 34.68626289 | 34.31249282 | 41.2953183  | 24.65390036 |
| MA16_Dca014713 | AP2/ERF73 | 41.05297535 | 43.37331515 | 13.07501939 | 13.58103308 | 20.19853312 | 13.65275995 |
| MA16_Dca014976 | AP2/ERF74 | 9.28730265  | 7.403616147 | 6.410949664 | 4.932534853 | 6.205884535 | 4.046037266 |
| MA16_Dca015060 | AP2/ERF75 | 10.71686787 | 13.40950104 | 8.152463499 | 6.917707189 | 5.053120595 | 5.387516255 |
| MA16_Dca015347 | AP2/ERF76 | 0.147790711 | 0.27554812  | 0.304770236 | 0.178872143 | 0.113616749 | 0           |
| MA16_Dca016047 | AP2/ERF77 | 37.63452567 | 36.16569072 | 88.77735565 | 143.9720094 | 120.6995878 | 140.5010045 |
| MA16_Dca016049 | AP2/ERF78 | 24.16741549 | 20.65199279 | 27.28672043 | 20.10937079 | 19.43475021 | 19.2138328  |
| MA16_Dca016529 | AP2/ERF79 | 0.284838926 | 0.495662917 | 0.078318343 | 0.068948513 | 0.613130032 | 0.066088813 |
| MA16_Dca016530 | AP2/ERF80 | 0.186067442 | 0.1156377   | 0           | 0.112599371 | 0.429128008 | 0.32378764  |
| MA16_Dca016545 | AP2/ERF81 | 12.02837085 | 14.35990661 | 12.28791761 | 8.573696929 | 11.03795068 | 8.273250357 |
| MA16_Dca016546 | AP2/ERF82 | 2.855047831 | 3.131228634 | 5.26421317  | 3.008304224 | 3.61507837  | 2.64973227  |
| MA16_Dca016670 | AP2/ERF83 | 0.627751807 | 0.468164281 | 0.086302251 | 0.075977245 | 0           | 0.072826023 |
| MA16_Dca016893 | AP2/ERF84 | 0.177755151 | 0.773302283 | 0.610936899 | 0.537845791 | 1.161545799 | 1.031076333 |
| MA16_Dca017057 | AP2/ERF85 | 432.8115732 | 450.3933442 | 319.0923426 | 303.2643492 | 295.1692855 | 273.4414436 |
| MA16_Dca017224 | AP2/ERF86 | 37.25557513 | 41.71492369 | 19.40088309 | 14.65757839 | 14.75439724 | 12.73993007 |
| MA16_Dca017496 | AP2/ERF87 | 22.63045266 | 23.41763116 | 86.49023153 | 45.73961157 | 36.45204023 | 64.75070486 |
| MA16_Dca018207 | AP2/ERF88 | 0.087376265 | 0.108605678 | 0.840863827 | 0           | 1.880817801 | 1.115025454 |
| MA16_Dca018529 | AP2/ERF89 | 0.195934655 | 0.208748576 | 0.192405452 | 0.101631899 | 0.172146589 | 0           |
| MA16_Dca018942 | AP2/ERF90 | 16.79439901 | 30.05979488 | 19.39446957 | 5.894650168 | 6.713716973 | 0.974166276 |
| MA16_Dca019542 | AP2/ERF91 | 14.32970748 | 14.66176651 | 8.408638272 | 11.26259988 | 10.00863758 | 8.210641976 |
| MA16_Dca020119 | AP2/ERF92 | 74.52442169 | 74.61771821 | 45.59511615 | 53.09302995 | 58.02044962 | 41.25594178 |
| MA16_Dca020229 | AP2/ERF93 | 1.538341976 | 1.613339363 | 1.850525597 | 0.349099907 | 0.813056659 | 0.836551709 |

|                |            |             |             |             |             |             |             |
|----------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|
| MA16_Dca020230 | AP2/ERF94  | 7.090131966 | 6.928293241 | 6.620870647 | 5.343034272 | 7.198992271 | 6.466448555 |
| MA16_Dca020428 | AP2/ERF95  | 164.8134167 | 171.731705  | 308.5172905 | 233.1365073 | 270.4654938 | 210.9434241 |
| MA16_Dca020530 | AP2/ERF96  | 4.750415719 | 3.389679251 | 1.814108549 | 2.02295876  | 1.623096411 | 1.020555146 |
| MA16_Dca020701 | AP2/ERF97  | 2.368675384 | 1.114014676 | 1.232156895 | 3.33171504  | 3.248201605 | 1.633898684 |
| MA16_Dca020702 | AP2/ERF98  | 7.0420079   | 5.331355948 | 3.080392238 | 5.888612629 | 5.9058211   | 3.044993003 |
| MA16_Dca021371 | AP2/ERF99  | 0.69632162  | 0.370930161 | 2.666739566 | 2.949670435 | 0.841200928 | 2.423425951 |
| MA16_Dca021421 | AP2/ERF100 | 3.045506051 | 3.144842671 | 0.193241998 | 4.253074053 | 6.411524863 | 4.131029743 |
| MA16_Dca021484 | AP2/ERF101 | 0.333004821 | 0.965798131 | 0.076301561 | 0.470211106 | 0.341337872 | 0.772643467 |
| MA16_Dca021629 | AP2/ERF102 | 21.82222221 | 20.71992697 | 7.152973316 | 7.947932136 | 11.33948411 | 6.915058423 |
| MA16_Dca021721 | AP2/ERF103 | 76.59831258 | 73.96719439 | 6.345633973 | 22.80751735 | 32.72765639 | 14.86939816 |
| MA16_Dca021730 | AP2/ERF104 | 0           | 0           | 0           | 0           | 0           | 0           |
| MA16_Dca022261 | AP2/ERF105 | 21.18457306 | 20.27378754 | 6.879026687 | 15.33671327 | 12.08962138 | 9.197304517 |
| MA16_Dca022373 | AP2/ERF106 | 0.350557786 | 0.629389531 | 1.445822656 | 0           | 0.059888346 | 0.045187231 |
| MA16_Dca022576 | AP2/ERF107 | 2.732985446 | 3.065591195 | 1.191326954 | 2.258952322 | 3.382148063 | 2.62924465  |
| MA16_Dca022999 | AP2/ERF108 | 0           | 0           | 0           | 0           | 0           | 0           |
| MA16_Dca023270 | AP2/ERF109 | 0.555008036 | 0.413913485 | 0.991920296 | 1.343460302 | 1.024013616 | 0.708256511 |
| MA16_Dca023272 | AP2/ERF110 | 1.626140311 | 0.866244089 | 1.064566693 | 1.030924776 | 2.143070411 | 0.898332973 |
| MA16_Dca023523 | AP2/ERF111 | 56.34309495 | 58.40947558 | 64.40043834 | 75.57041054 | 72.29743116 | 85.65306823 |
| MA16_Dca024190 | AP2/ERF112 | 0.07790173  | 0.484145793 | 0           | 0           | 0.119776693 | 0           |
| MA16_Dca024506 | AP2/ERF113 | 5.02201446  | 4.291505911 | 0.086302251 | 2.507249092 | 1.351267158 | 1.966302609 |
| MA16_Dca024926 | AP2/ERF114 | 18.31989025 | 16.00666682 | 50.29767126 | 35.67194977 | 35.78927586 | 40.56834275 |
| MA16_Dca024988 | AP2/ERF115 | 8.621124823 | 8.602793411 | 12.68683612 | 6.907152002 | 6.814337867 | 8.487137831 |
| MA16_Dca025176 | AP2/ERF116 | 0           | 0           | 0           | 0           | 0           | 0           |
| MA16_Dca025483 | AP2/ERF117 | 2.604298124 | 2.00920504  | 4.197645614 | 4.130207469 | 3.175745929 | 3.750540162 |
| MA16_Dca025501 | AP2/ERF118 | 103.4147802 | 102.6017999 | 36.94046425 | 30.69344221 | 31.07452096 | 32.74423686 |
| MA16_Dca025668 | AP2/ERF119 | 0.61579463  | 1.148117166 | 0.507950394 | 0.894360715 | 0.662764368 | 0.714388602 |
| MA16_Dca025795 | AP2/ERF120 | 0.047542968 | 0           | 0.261445056 | 0           | 0           | 0.055155002 |
| MA16_Dca026159 | AP2/ERF121 | 0           | 0           | 0.026855383 | 0.070927398 | 0           | 0           |
| MA16_Dca026998 | AP2/ERF122 | 0.071053227 | 0.264950115 | 0           | 0.085996223 | 0.218493748 | 0.082429454 |
| MA16_Dca027453 | AP2/ERF123 | 1.436854137 | 0.85045716  | 0           | 0.662489419 | 0.841605546 | 0.476259068 |
| MA16_Dca028380 | AP2/ERF124 | 29.12024385 | 34.29043268 | 42.53614222 | 33.62133799 | 32.54909451 | 24.22571127 |
| MA16_Dca028782 | AP2/ERF125 | 0.248686293 | 0.206072312 | 0.113963229 | 0.100328926 | 0.764728117 | 0.192335393 |

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