**Table S3.** Zero pollen expression of 133 HRGP genes.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Locus ID | Gene Name | Tissue specificity index | Expression in Pollen | Expression in other tissues |
| AT3G12660 | FLA14 | 1 | 0 | 0.045427 |
| AT2G26720 | PAG3 | 1 | 0 | 0.003441 |
| AT2G27380 | PRP6 | 0.995 | 0 | 0.210124 |
| AT3G60270 | PAG8 | 0.993 | 0 | 0.067941 |
| AT2G23990 | PAG1 | 0.991 | 0 | 0.263896 |
| AT4G11430 | HAE3 | 0.987 | 0 | 0.014219 |
| AT1G31250 | AGP51C | 0.965 | 0 | 0.010855 |
| AT3G24540 | PERK3 | 0.959 | 0 | 0.017982 |
| AT5G59170 | PRP12 | 0.95 | 0 | 0.104502 |
| AT3G01730 | AGP44P | 0.949 | 0 | 0.245969 |
| AT4G32490 | PAG14 | 0.949 | 0 | 0.004103 |
| AT3G60280 | PAG9 | 0.932 | 0 | 0.460714 |
| AT4G30590 | PAG12 | 0.926 | 0 | 0.147859 |
| AT2G20520 | FLA6 | 0.921 | 0 | 0.532842 |
| AT5G26080 | EXT40 | 0.917 | 0 | 0.212566 |
| AT3G20850 | EXT35 | 0.903 | 0 | 0.046228 |
| AT1G70460 | PERK13 | 0.902 | 0 | 0.665086 |
| AT1G26240 | EXT20 | 0.901 | 0 | 0.390414 |
| AT2G47530 | PRP7 | 0.9 | 0 | 0.591764 |
| AT1G54970 | PRP1 | 0.892 | 0 | 0.94901 |
| AT1G12040 | LRX1 | 0.89 | 0 | 1.202684 |
| AT5G19810 | EXT19 | 0.884 | 0 | 0.190876 |
| AT5G19800 | EXT39 | 0.877 | 0 | 0.643603 |
| AT4G08400 | EXT11 | 0.86 | 0 | 1.591567 |
| AT3G19430 | EXT51 | 0.858 | 0 | 1.183951 |
| AT4G31370 | FLA5 | 0.857 | 0 | 0.409468 |
| AT1G26250 | EXT21 | 0.857 | 0 | 1.417899 |
| AT5G06630 | EXT13 | 0.857 | 0 | 1.383985 |
| AT5G06640 | EXT14 | 0.857 | 0 | 1.555665 |
| AT5G49080 | EXT16 | 0.857 | 0 | 1.190043 |
| AT4G40090 | AGP3C | 0.856 | 0 | 2.092315 |
| AT4G08410 | EXT12 | 0.856 | 0 | 1.302674 |
| AT2G24980 | EXT7 | 0.855 | 0 | 1.601831 |
| AT4G26320 | AGP13P | 0.847 | 0 | 2.167952 |
| AT5G35190 | EXT15 | 0.835 | 0 | 1.87016 |
| AT1G62440 | LRX2 | 0.835 | 0 | 1.303769 |
| AT3G62680 | PRP3 | 0.834 | 0 | 2.031075 |
| AT3G54580 | EXT10 | 0.827 | 0 | 2.714114 |
| AT4G13390 | EXT18 | 0.823 | 0 | 1.509802 |
| AT2G33790 | AGP30I | 0.82 | 0 | 2.206573 |
| AT1G02405 | EXT30 | 0.82 | 0 | 0.208188 |
| AT3G54590 | EXT2 | 0.817 | 0 | 2.321261 |
| AT4G22470 | HAE4 | 0.809 | 0 | 2.045605 |
| AT3G28550 | EXT9 | 0.79 | 0 | 3.068205 |
| AT1G70990 | EXT33 | 0.787 | 0 | 1.174895 |
| AT1G35230 | AGP5C | 0.781 | 0 | 1.732403 |
| AT1G63530 | AGP52C | 0.78 | 0 | 0.821266 |
| AT3G22800 | LRX6 | 0.78 | 0 | 1.666143 |
| AT3G06360 | AGP27C | 0.779 | 0 | 0.85181 |
| AT1G23720 | EXT6 | 0.775 | 0 | 2.911627 |
| AT5G09520 | PRP9 | 0.771 | 0 | 1.874016 |
| AT5G12880 | AGP45P | 0.756 | 0 | 2.004639 |
| AT2G32300 | PAG5 | 0.755 | 0 | 2.108627 |
| AT1G15190 | FLA19 | 0.742 | 0 | 0.255019 |
| AT5G53870 | PAG17 | 0.734 | 0 | 1.16816 |
| AT3G50570 | PRP8 | 0.696 | 0 | 1.264976 |
| AT5G09530 | PRP10 | 0.693 | 0 | 3.334937 |
| AT2G44790 | PAG6 | 0.654 | 0 | 5.056062 |
| AT1G62500 | PRP14 | 0.654 | 0 | 3.165278 |
| AT1G03820 | AGP28I | 0.641 | 0 | 3.648994 |
| AT2G22470 | AGP2C | 0.62 | 0 | 4.838186 |
| AT5G11990 | EXT38 | 0.603 | 0 | 1.28999 |
| AT3G60900 | FLA10 | 0.602 | 0 | 2.041547 |
| AT4G15160 | PRP17 | 0.597 | 0 | 3.606031 |
| AT1G15825 | PRP5 | 0.549 | 0 | 2.327767 |
| AT5G26330 | PAG16 | 0.547 | 0 | 2.322545 |
| AT2G21140 | PRP2 | 0.544 | 0 | 4.45603 |
| AT1G21310 | EXT3/5 | 0.537 | 0 | 7.036294 |
| AT5G65390 | AGP7C | 0.534 | 0 | 4.63927 |
| AT1G52290 | PERK15 | 0.527 | 0 | 2.676042 |
| AT5G25090 | PAG15 | 0.522 | 0 | 3.807744 |
| AT4G32710 | PERK14 | 0.511 | 0 | 2.789311 |
| AT1G09460 | PRP13 | 0.507 | 0 | 2.901078 |
| AT4G16980 | AGP58C | 0.493 | 0 | 6.085562 |
| AT3G22070 | AGP56C | 0.484 | 0 | 1.869233 |
| AT1G23040 | EXT31 | 0.481 | 0 | 3.99104 |
| AT1G68725 | AGP19K | 0.477 | 0 | 2.567081 |
| AT4G31840 | PAG13 | 0.471 | 0 | 4.895936 |
| AT2G25060 | PAG2 | 0.47 | 0 | 4.809773 |
| AT3G52370 | FLA15 | 0.456 | 0 | 3.294942 |
| AT1G76930 | EXT1/4 | 0.449 | 0 | 7.022802 |
| AT2G23130 | AGP17K | 0.443 | 0 | 4.097833 |
| AT2G43150 | EXT8 | 0.443 | 0 | 7.581732 |
| AT5G44130 | FLA13 | 0.429 | 0 | 5.14169 |
| AT5G15780 | PRP11 | 0.42 | 0 | 5.261647 |
| AT3G22120 | PRP16 | 0.416 | 0 | 7.176419 |
| AT3G11030 | EXT50 | 0.411 | 0 | 2.926934 |
| AT5G49280 | EXT41 | 0.41 | 0 | 3.382053 |
| AT2G10940 | PRP15 | 0.409 | 0 | 8.289084 |
| AT5G64310 | AGP1C | 0.408 | 0 | 5.58755 |
| AT3G46550 | FLA4 | 0.389 | 0 | 3.92464 |
| AT5G14920 | PRP18 | 0.389 | 0 | 5.937718 |
| AT1G03870 | FLA9 | 0.388 | 0 | 6.066351 |
| AT4G16140 | EXT37 | 0.375 | 0 | 4.369347 |
| AT5G10430 | AGP4C | 0.372 | 0 | 4.54699 |
| AT5G60490 | FLA12 | 0.37 | 0 | 2.191814 |
| AT5G55730 | FLA1 | 0.357 | 0 | 4.913139 |
| AT4G38770 | PRP4 | 0.347 | 0 | 7.905761 |
| AT1G28290 | AGP31I | 0.344 | 0 | 6.926692 |
| AT3G13520 | AGP12P | 0.335 | 0 | 7.211384 |
| AT4G27520 | PAG10 | 0.328 | 0 | 6.524824 |
| AT1G26150 | PERK10 | 0.325 | 0 | 4.901854 |
| AT4G18670 | LRX5 | 0.323 | 0 | 4.7148 |
| AT3G20570 | PAG7 | 0.322 | 0 | 4.166905 |
| AT5G18690 | AGP25C | 0.321 | 0 | 3.310488 |
| AT4G12730 | FLA2 | 0.312 | 0 | 5.988272 |
| AT5G03170 | FLA11 | 0.308 | 0 | 3.917086 |
| AT4G09030 | AGP10C | 0.301 | 0 | 4.504987 |
| AT3G06750 | EXT34 | 0.279 | 0 | 4.980977 |
| AT4G37450 | AGP18K | 0.275 | 0 | 4.986651 |
| AT2G35860 | FLA16 | 0.261 | 0 | 4.749233 |
| AT2G47930 | AGP26C | 0.253 | 0 | 5.120647 |
| AT2G04780 | FLA7 | 0.251 | 0 | 5.662764 |
| AT4G13340 | LRX3 | 0.245 | 0 | 5.291827 |
| AT5G06390 | FLA17 | 0.243 | 0 | 4.451382 |
| AT2G45470 | FLA8 | 0.237 | 0 | 6.624181 |
| AT3G24550 | PERK1 | 0.236 | 0 | 5.411293 |
| AT5G11740 | AGP15P | 0.228 | 0 | 8.152427 |
| AT3G24480 | LRX4 | 0.225 | 0 | 5.853488 |
| AT5G21160 | AGP32I | 0.212 | 0 | 4.867483 |
| AT2G14890 | AGP9C | 0.209 | 0 | 7.488385 |
| AT5G38560 | PERK8 | 0.191 | 0 | 4.048411 |
| AT1G63540 | AGP53C | 0 | 0 | 0 |
| AT5G06920 | FLA21 | 0 | 0 | 0 |
| AT5G40940 | FLA20 | 0 | 0 | 0 |
| AT2G31050 | PAG4 | 0 | 0 | 0 |
| AT4G28365 | PAG11 | 0 | 0 | 0 |
| AT1G36150 | AGP29I | 0 | 0 | 0 |
| AT5G56330 | AGP33I | 0 | 0 | 0 |
| AT4G08370 | EXT22 | 0 | 0 | 0 |
| AT4G08380 | EXT17 | 0 | 0 | 0 |
| AT3G53330 | EXT52 | 0 | 0 | 0 |
| AT3G50580 | HAE2 | 0 | 0 | 0 |

AT5G49080 can’t be matched to Enmsebl Plant database.