Table S3. Correlation analysis of genes involved in polysaccharides biosynthesis and polysaccharide content.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Gene\_id |  | Man | GlcA | Rha | GalA | Glc | Gal | Xyl | Ara | Fuc | Total polysaccharide |
| Pg\_S2017.3(PGM) | CorSig.(2-tailed) | 0.5100.003 | 0.4380.014 | 0.5250.002 |  |  |  | 0.4020.025 | 0.3870.031 |  |  |
| Pg\_S4434.4(HK) | CorSig.(2-tailed) |  | -0.3570.049 |  |  |  |  | -0.4410.013 |  |  |  |
| Pg\_S0635.5(scrK) | CorSig.(2-tailed) |  |  |  |  |  | 0.666<0.001 |  | -0.702<0.001 |  |  |
| Pg\_S3013.7(UXE) | CorSig.(2-tailed) |  | 0.3600.046 | 0.3600.047 |  |  |  | 0.4110.022 |  |  |  |
| Pg\_S4588.10(UXS1) | CorSig.(2-tailed) |  | 0.4530.010 | 0.4150.020 |  |  |  | 0.4940.005 |  |  |  |
| Pg\_S5470.8(SUS) | CorSig.(2-tailed) |  |  |  |  | 0.4200.019 |  |  |  |  | 0.4140.021 |
| Pg\_S7084.1(sacA) | CorSig.(2-tailed) |  | 0.3600.047 | 0.4230.018 |  | 0.3630.045 | -0.4020.025 | 0.4200.019 |  |  | 0.3920.029 |
| Pg\_S5853.14(UXS1) | CorSig.(2-tailed) |  | 0.4780.006 | 0.5650.001 |  |  |  | 0.4720.007 |  |  |  |
| Pg\_S7836.3(GMPP) | CorSig.(2-tailed) |  | 0.5470.001 | 0.5760.001 | 0.5070.004 | 0.689<0.001 | -0.4530.010 | 0.634<0.001 |  |  | 0.686<0.001 |
| Pg\_S0917.35(PGM) | CorSig.(2-tailed) |  | 0.4020.025 | 0.3890.031 |  | 0.3620.046 | -0.5558<0.001 | 0.5260.002 | -0.5370.002 |  |  |
| Pg\_S3346.1(HK) | CorSig.(2-tailed) |  |  |  |  | 0.4230.018 | -0.3980.027 |  |  |  | 0.4070.023 |
| Pg\_S1347.13(SUS) | CorSig.(2-tailed) |  | 0.4090.023 | 0.4400.013 | 0.4490.011 | 0.4280.016 |  | 0.5450.002 |  |  | 0.4100.022 |
| Pg\_S5058.9(UXS1) | CorSig.(2-tailed) | 0.4180.019 | 0.5120.003 | 0.601<0.001 |  |  |  | 0.4190.019 |  |  | 0.3600.046 |
| Pg\_S0458.3(PGM) | CorSig.(2-tailed) |  |  |  |  |  | 0.613<0.001 |  | 0.5040.004 |  |  |
| Pg\_S7036.4(GPI) | CorSig.(2-tailed) |  |  |  |  |  | -0.5410.002 | 0.4490.0111 | -0.5170.003 | -0.4530.010 |  |
| Pg\_S0953.13(GMPP) | CorSig.(2-tailed) |  | 0.5260.002 |  |  | 0.4330.015 | -0.608<0.001 | 0.5700.001 | -0.4600.009 |  | 0.4210.009 |
| Pg\_S1306.14(scrK) | CorSig.(2-tailed) |  |  |  |  |  | 0.3800.035 |  | 0.5130.003 |  |  |
| Pg\_S1290.1(GAE) | CorSig.(2-tailed) |  |  |  |  |  | -0.4670.008 | 0.3970.027 | -0.5260.002 |  |  |
| Pg\_S4516.21(PMM) | CorSig.(2-tailed) |  | 0.4800.006 | 0.3830.033 |  |  | -0.4190.019 | 0.4910.005 |  |  |  |
| Pg\_S2020.12(UGDH) | CorSig.(2-tailed) | -0.4090.023 | -0.590<0.001 | -0.4550.010 |  | -0.3890.030 |  | -0.5860.001 |  |  | -0.3940.028 |
| Pg\_S4342.7(UXS1) | CorSig.(2-tailed) | 0.4460.012 | 0.5140.003 | 0.4650.008 |  |  | -0.4170.019 | 0.4960.005 |  |  |  |
| Pg\_S1124.2(UGP2) | CorSig.(2-tailed) |  | 0.5350.002 | 0.5090.003 | 0.3820.034 | 0.4740.007 | -0.4620.009 | 0.692<0.001 | -0.3940.028 |  | 0.4420.013 |
| Pg\_S0897.14(GALE) | CorSig.(2-tailed) |  |  |  |  |  |  |  |  | -0.4030.025 | -0.3750.038 |
| Pg\_S0808.14(UGDH) | CorSig.(2-tailed) |  |  |  |  | -0.4690.008 |  |  |  | -0.3960.028 | -0.4890.005 |
| Pg\_S1501.44(TSTA3) | CorSig.(2-tailed) |  |  |  |  |  | -0.6140<001 | 0.4540.010 | -0.614<0.001 |  |  |
| Pg\_S1886.12(GMPP) | CorSig.(2-tailed) |  | 0.3750.038 |  |  | 0.4320.015 | -0.3850.032 |  |  |  | 0.4510.011 |
| Pg\_S4425.1(UXE) | CorSig.(2-tailed) |  |  |  |  | 0.3830.033 |  |  |  |  | 0.4030.025 |
| Pg\_S5644.4(MPI) | CorSig.(2-tailed) |  |  |  | -0.3600.046 |  |  |  | 0.3570.048 |  |  |
| Pg\_S8336.3(scrK) | CorSig.(2-tailed) |  |  | -0.3960.028 | -0.5700.001 | -0.4820.006 |  | -0.3630.045 |  |  | -0.5050.004 |
| Pg\_S1563.8(UXS1) | CorSig.(2-tailed) | 0.4490.011 | 0.639<0.001 | 0.5140.003 |  | 0.687<0.001 | -0.5200.003 | 0.615<0.001 |  |  | 0.676<0.001 |
| Pg\_S2035.27(UGP2) | CorSig.(2-tailed) |  | 0.4820.006 | 0.4410.013 | 0.606<0.001 | 0.5550.001 | -0.5950.001 | 0.5290.002 |  |  | 0.5480.001 |
| Pg\_S4929.12(HK) | CorSig.(2-tailed) | -0.4340.015 | -0.5720.001 | -0.4730.007 | -0.4210.018 |  |  | -0.4250.017 |  |  | -0.3610.046 |
| Pg\_S4083.8(SUS) | CorSig.(2-tailed) |  |  |  |  | -0.3610.046 | 0.4210.018 |  |  |  | -0.3700.040 |
| Pg\_S1495.1(scrK) | CorSig.(2-tailed) |  |  |  |  | 0.3880.031 | -0.4940.005 |  |  |  | 0.3820.034 |
| Pg\_S0061.8(sacA) | CorSig.(2-tailed) |  |  |  | -0.5660.001 | -0.4730.007 | 0.4410.013 | -0.4790.006 | 0.3690.038 |  | -0.4610.009 |
| Pg\_S0758.5(UXS1) | CorSig.(2-tailed) |  | 0.4170.020 |  |  | 0.3810.035 | -0.5060.004 | 0.3710.040 |  |  | 0.3670.042 |
| Pg\_S0496.3(UXS1) | CorSig.(2-tailed) |  |  |  |  |  |  |  | 0.3880.031 |  |  |
| Pg\_S0219.46(UGDH) | CorSig.(2-tailed) |  |  |  |  |  |  |  | -0.4370.014 |  |  |
| Pg\_S3876.17(sacA) | CorSig.(2-tailed) |  | -0.4370.014 |  | -0.4160.020 | -0.5310.002 | 0.5320.002 | -0.5380.002 | 0.4320.015 |  | -0.5250.002 |
| Pg\_S5989.1(GALE) | CorSig.(2-tailed) |  |  |  |  | -0.4020.025 | 0.5080.004 |  | 0.3980.027 |  | -0.4000.026 |
| Pg\_S4164.13(UGP2) | CorSig.(2-tailed) |  |  |  |  | 0.3760.037 | -0.4440.012 |  |  |  | 0.3570.049 |
| Pg\_S1171.27(UXE) | CorSig.(2-tailed) |  |  |  |  |  | -0.4310.015 |  |  | 0.3670.042 |  |
| Pg\_S2316.15(UXS1) | CorSig.(2-tailed) |  | 0.602<0.001 | 0.4310.016 | 0.4190.019 | 0.716<0.001 | -0.4790.006 | 0.643<0.001 |  |  | 0.711<0.001 |
| Pg\_S1242.6(UGDH) | CorSig.(2-tailed) |  |  |  |  | -0.4540.010 |  |  |  | -0.5570.001 | -0.4760.007 |
| Pg\_S0588.13(scrK) | CorSig.(2-tailed) |  |  |  | 0.5450.002 | 0.3900.030 |  |  |  |  | 0.4140.021 |
| Pg\_S0234.21(HK) | CorSig.(2-tailed) |  |  |  | -0.4710.007 |  |  |  |  |  |  |
| Pg\_S8075.1(GPI) | CorSig.(2-tailed) |  |  |  |  |  | 0.661<0.001 |  | 0.670<0.001 |  |  |
| Pg\_S2021.6(GAE) | CorSig.(2-tailed) |  |  |  | 0.4310.015 | 0.4000.026 | -0.4330.015 |  |  |  | 0.4220.018 |
| Pg\_S1915.25(GMPP) | CorSig.(2-tailed) |  | 0.4820.006 | 0.3750.038 | 0.5870.001 | 0.630<0.001 |  | 0.5400.002 |  |  | 0.647<0.001 |
| Pg\_S3604.8(GALE) | CorSig.(2-tailed) |  |  |  |  | -0.4370.014 | 0.3680.042 |  |  |  | -0.4680.008 |
| Pg\_S3302.8(UGP2) | CorSig.(2-tailed) | 0.4150.020 | 0.4620.009 | 0.4720.007 |  | 0.3800.035 |  | 0.4900.005 |  |  | 0.3880.031 |
| Pg\_S3338.6(GMPP) | CorSig.(2-tailed) |  |  |  |  |  | 0.4900.005 |  | 0.4750.007 |  |  |
| Pg\_S5422.1(SUS) | CorSig.(2-tailed) | 0.3940.028 | 0.649<0.001 | 0.4340.015 |  | 0.619<0.001 | -0.5090.003 | 0.798<0.001 |  |  | 0.5850.001 |
| Pg\_S5155.1(scrK) | CorSig.(2-tailed) |  | 0.4790.006 | 0.5070.004 | 0.3760.037 | 0.5010.004 |  | 0.649<0.001 |  |  | 0.4830.006 |
| Pg\_S5279.7(PGM) | CorSig.(2-tailed) |  |  | 0.3800.035 |  |  |  | 0.4400.013 | -0.3760.037 |  |  |
| Pg\_S0167.13(GPI) | CorSig.(2-tailed) |  |  |  |  |  | -0.5250.002 | 0.4460.012 | -0.5720.001 | -0.4580.010 |  |
| Pg\_S1147.6(PGM) | CorSig.(2-tailed) | 0.3830.033 | 0.3780.036 | 0.4570.010 | 0.645<0.001 | 0.5750.001 |  | 0.4390.014 |  |  | 0.590<0.001 |
| Pg\_S2241.31(scrK) | CorSig.(2-tailed) |  | 0.5830.001 | 0.4780.007 | 0.4590.009 | 0.5710.001 | -0.5020.004 | 0.639<0.001 |  |  | 0.5450.002 |
| Pg\_S1305.19(UGDH) | CorSig.(2-tailed) |  | 0.4140.021 |  |  |  |  |  |  |  |  |
| Pg\_S0113.8(GAE) | CorSig.(2-tailed) |  |  |  |  |  | 0.4070.023 |  |  |  |  |
| Pg\_S1064.5(GPI) | CorSig.(2-tailed) |  |  |  | 0.5130.003 |  |  |  |  |  |  |
| Pg\_S3830.6(SUS) | CorSig.(2-tailed) |  |  |  |  |  |  |  | -0.3590.047 |  |  |
| Pg\_S5794.4(SUS) | CorSig.(2-tailed) | 0.3870.032 | 0.5510.001 | 0.601<0.001 |  | 0.5110.003 | -0.4510.011 | 0.679<0.001 |  |  | 0.4850.006 |
| Pg\_S0455.9(GMPP) | CorSig.(2-tailed) |  |  |  |  |  |  |  | -0.3870.031 |  |  |
| Pg\_S3153.2(scrK) | CorSig.(2-tailed) |  | 0.5550.001 | 0.4080.023 |  | 0.5380.002 | -0.714<0.001 | 0.606<0.001 | -0.612<0.001 |  | 0.5070.004 |
| Pg\_S4460.5(GMDS) | CorSig.(2-tailed) |  |  |  |  |  | -0.3970.027 |  |  |  |  |

Note: Cor, Coefficient of correlation; Sig, P valve.