

Table S4A. CAZy genes that are up regulated in sophorose

| Protein ID | Name       | Class                 | Family | Annotation                                                            | log <sub>2</sub> FC Sph/Cel | p-value     |
|------------|------------|-----------------------|--------|-----------------------------------------------------------------------|-----------------------------|-------------|
| 105956     |            | Glycoside hydrolase   | 13     | Candidate $\alpha$ -amylase                                           | 2.1286                      | 6E-24       |
| 55802      |            | Glycoside hydrolase   | 76     | Candidate $\alpha$ -1,6-mannanase                                     | 1.9559                      | 8.7E-15     |
| 82235      |            | Glycoside hydrolase   | 31     | Candidate $\alpha$ -glucosidase                                       | 1.8953                      | 8.51E-20    |
| 82227      | cel3c      | Glycoside hydrolase   | 3      | Candidate $\beta$ -glucosidase                                        | 1.6899                      | 2.57E-32    |
| 120749     | bgl2/cel1a | Glycoside hydrolase   | 1      | $\beta$ -glucosidase                                                  | 1.6795                      | 1.01E-18    |
| 50215      |            | Glycoside hydrolase   | 16     | Candidate endo-1,3- $\beta$ -D-glucosidase/1,3-glucan binding protein | 1.6128                      | 1.15E-23    |
| 59082      | chi18-2    | Glycoside hydrolase   | 18     | Candidate chitinase                                                   | 1.5828                      | 0.003875319 |
| 80240      | bga1       | Glycoside hydrolase   | 35     | $\beta$ -galactosidase                                                | 1.5736                      | 5.07E-31    |
| 66041      | chi18-18   | Glycoside hydrolase   | 18     | Candidate chitinase                                                   | 1.5377                      | 7.42E-11    |
| 106575     |            | Glycoside hydrolase   | 79     | Candidate $\beta$ -glucuronidase                                      | 1.5174                      | 1.22E-14    |
| 123456     |            | Glycoside hydrolase   | 65     | Candidate $\alpha$ , $\alpha$ -trehalase                              | 1.5006                      | 5.69E-17    |
| 79671      |            | Carbohydrate esterase | 9      | Candidate N-acetyl-glucosamine-6-phosphate deacetylase                | 1.3821                      | 0.00000921  |
| 108477     |            | Glycoside hydrolase   | 13     | Candidate $\alpha$ -glucosidase/oligo $\alpha$ -glucosidase           | 1.3297                      | 9.49E-14    |
| 74198      |            | Glycoside hydrolase   | 92     | Candidate $\alpha$ -1,2-mannosidase                                   | 1.2728                      | 5.09E-08    |
| 122511     |            | Glycoside hydrolase   | 16     | Candidate glucan endo-1,3(4)- $\beta$ -D-glucosidase                  | 1.2565                      | 2.07E-11    |
| 121735     | cel3b      | Glycoside hydrolase   | 3      | Candidate $\beta$ -glucosidase                                        | 1.2107                      | 9.89E-12    |
| 71532      |            | Glycoside hydrolase   | 71     | Candidate $\alpha$ -1 3-glucanase                                     | 1.1734                      | 8.21E-08    |
| 22197      | cel1b      | Glycoside hydrolase   | 1      | Candidate $\beta$ -glucosidase                                        | 1.1577                      | 2.97E-19    |
| 79669      |            | Glycoside hydrolase   | 3      | Candidate $\beta$ -N-acetylglucosaminidase                            | 1.0480                      | 9.44E-16    |
| 58117      |            | Glycoside hydrolase   | 89     | Candidate $\alpha$ -N-acetylglucosaminidase                           | 1.0084                      | 0.000390284 |
| 65380      |            | Glycoside hydrolase   | 47     | Candidate $\alpha$ -1,2-mannosidase                                   | 1.0010                      | 1.66E-13    |

Table S4B. CAZy enzymes that are up regulated in cellulose

| Protein ID | Name            | Class                               | Family | Annotation                                                 | log <sub>2</sub> FC Sph/Cel | p-value     |
|------------|-----------------|-------------------------------------|--------|------------------------------------------------------------|-----------------------------|-------------|
| 80833      | chi46           | Glycoside hydrolase<br>Carbohydrate | 18     | Chitinase                                                  | -1.0173                     | 3.2E-09     |
| 73632      | axe1            | esterase                            | 5      | Acetyl xylan esterase                                      | -1.0245                     | 2.32E-08    |
| 53731      |                 | Glycoside hydrolase                 | 5      | Candidate endo- $\beta$ -1,4-glucanase                     | -1.0746                     | 0.006503566 |
| 65162      | Endo T          | Glycoside hydrolase                 | 18     | Endo-N-acetyl- $\beta$ -D-glucosaminidase                  | -1.0917                     | 1.46E-08    |
| 123226     |                 | Glycoside hydrolase                 | 37     | Candidate $\alpha$ , $\alpha$ -trehalase                   | -1.0944                     | 0.000000518 |
| 2735       | chi18-6         | Glycoside hydrolase                 | 18     | Candidate chitinase                                        | -1.0999                     | 0.000000414 |
| 49081      | cel74a          | Glycoside hydrolase                 | 74     | Xyloglucanase                                              | -1.3971                     | 6.56E-15    |
| 45717      | mds1            | Glycoside hydrolase                 | 47     | $\alpha$ -1,2-mannosidase                                  | -1.5459                     | 2.41E-09    |
| 123232     | egl3/cel12<br>a | Glycoside hydrolase                 | 12     | Endo- $\beta$ -1,4-glucanase                               | -1.6085                     | 3.92E-18    |
| 79602      |                 | Glycoside hydrolase<br>Carbohydrate | 81     | Candidate endo-1,3- $\beta$ -glucanase                     | -1.6627                     | 4.93E-19    |
| 44366      |                 | esterase                            | 3      | Candidate esterase                                         | -1.8139                     | 3.39E-32    |
| 120312     | egl2/cel5a      | Glycoside hydrolase                 | 5      | Endo- $\beta$ -1,4-glucanase                               | -1.8718                     | 8.51E-43    |
| 123818     | xyn2            | Glycoside hydrolase                 | 11     | Endo- $\beta$ -1,4-xylanase                                | -1.9745                     | 3.37E-26    |
| 69944      |                 | Glycoside hydrolase                 | 31     | Candidate $\alpha$ -xylosidase/ $\alpha$ -glucosidase      | -2.0070                     | 3.94E-17    |
| 111849     | xyn4            | Glycoside hydrolase                 | 30     | Endo- $\beta$ -1,4-xylanase                                | -2.0563                     | 5.74E-46    |
| 74807      |                 | Glycoside hydrolase                 | 76     | Candidate $\alpha$ -1,6-mannanase                          | -2.7202                     | 5.29E-89    |
| 123283     | abf1            | Glycoside hydrolase                 | 54     | $\alpha$ -L-arabinofuranosidase I                          | -2.7247                     | 1.3E-48     |
| 122495     |                 | Glycoside hydrolase                 | 76     | Candidate $\alpha$ -1,6-mannanase                          | -3.0661                     | 1.33E-53    |
| 120229     | xyn3            | Glycoside hydrolase                 | 10     | Endo- $\beta$ -1,4-xylanase                                | -3.3849                     | 6.11E-45    |
| 62166      |                 | Glycoside hydrolase                 | 2      | Candidate $\beta$ -mannosidase                             | -3.4682                     | 5.64E-26    |
| 120961     | cel61b          | Glycoside hydrolase                 | 61     | Candidate copper-dependent polysaccharide<br>monooxygenase | -3.5574                     | 1.35E-85    |
| 76210      | abf2            | Glycoside hydrolase                 | 62     | Candidate $\alpha$ -L-arabinofuranosidase                  | -3.8807                     | 1.08E-65    |
| 56996      | man1            | Glycoside hydrolase                 | 5      | $\beta$ -Mannanase                                         | -5.4028                     | 5.28E-84    |
| 124175     |                 | Glycoside hydrolase                 | 64     | Candidate endo-1,3- $\beta$ -glucanase                     | -5.6390                     | 2.01E-137   |
| 55886      |                 | Glycoside hydrolase                 | 16     | Candidate glucan endo-1,3(4)- $\beta$ -D-glucosidase       | -7.0670                     | 3.59E-67    |

Table S4C. CAZy enzymes that are up regulated in glucose

| Protein ID | Name     | Class               | Family | Annotation                                                                 | log <sub>2</sub> FC gluc/soph/cel | p-value     |
|------------|----------|---------------------|--------|----------------------------------------------------------------------------|-----------------------------------|-------------|
| 121136     |          | Glycoside hydrolase | NA     | -                                                                          | -5.1769                           | 0.022304559 |
| 49274      |          | Glycoside hydrolase | 16     | Candidate glucan endo-1,3(4)- $\beta$ -D-glucosidase                       | -3.6300                           | 0.00598636  |
| 121294     |          | Glycoside hydrolase | 16     | Candidate glucan endo-1,3(4)- $\beta$ -D-glucosidase                       | -2.6584                           | 0.005798218 |
| 50215      |          | Glycoside hydrolase | 16     | Candidate endo-1,3- $\beta$ -D-glucosidase/1,3-glucan binding protein      | -2.5328                           | 0.0007701   |
| 82616      | cel5b    | Glycoside hydrolase | 5      | Candidate membrane bound endoglucanase                                     | -2.4871                           | 0.000368036 |
| 82633      |          | Glycoside hydrolase | 72     | Candidate $\beta$ -1 3-glucanosyltransferase                               | -2.1732                           | 1.15E-15    |
| 82633      |          | Glycoside hydrolase | 72     | Candidate $\beta$ -1 3-glucanosyltransferase                               | -2.0714                           | 0.002177737 |
| 122511     |          | Glycoside hydrolase | 16     | Candidate glucan endo-1,3(4)- $\beta$ -D-glucosidase                       | -2.0364                           | 3.25E-12    |
| 53731      |          | Glycoside hydrolase | 5      | Candidate endo- $\beta$ -1,4-glucanase                                     | -2.0080                           | 0.0000499   |
| 39942      |          | Glycoside hydrolase | 17     | Candidate glucan endo-1,3- $\beta$ -glucosidase                            | -1.9124                           | 0.030050127 |
| 66041      | chi18-18 | Glycoside hydrolase | 18     | Candidate chitinase                                                        | -1.5663                           | 1.06E-19    |
| 39755      |          | Glycoside hydrolase | 16     | Candidate glucan endo-1,3(4)- $\beta$ -D-glucosidase                       | -1.3516                           | 0.002774499 |
| 77284      |          | Glycoside hydrolase | 12     | Candidate endo- $\beta$ -1,4-glucanase                                     | -1.3141                           | 0.000101813 |
| 65333      |          | Glycoside hydrolase | 15     | Candidate alpha-glycosidase (Glucoamylase and related glycosyl hydrolases) | -1.3056                           | 0.000892332 |
| 81598      | chi18-7  | Glycoside hydrolase | 18     | Candidate chitinase                                                        | -1.1877                           | 0.0000114   |
| 68064      |          | Glycoside hydrolase | 43     | Candidate $\beta$ -xylosidase/ $\alpha$ -L-arabinofuranosidase             | -1.1055                           | 0.0000069   |
| 71399      |          | Glycoside hydrolase | 16     | Candidate endo-1,3- $\beta$ -glucanase                                     | -1.0620                           | 0.000340308 |