**Supplemental Table S3: Genes annotated as having protein kinase activity responsible for ontological enrichment in the 2,500 genes with large principal component loadings.** These genes represent kinases with expression values that vary across the sampled tissues and may play a role in specifying or maintaining tissue identity. This table represents an abridged version of the complete table, which can be found in Supplemental File S3.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **GO:0004672** | **molecular\_function** | **protein kinase activity** | **p = 0.000254709** |  |   |
| **Sorghum transcript ID** | **Arabidopsis transcript ID** | **Arabidopsis symbol** | **Arabidopsis definition line** | **Rice transcript ID** | **Rice definition line** |
| Sobic.010G069200.1 | AT1G67580.1 |   | Protein kinase superfamily protein | LOC\_Os10g06510.1 | cyclin-dependent kinase G-1, putative, expressed |
| Sobic.008G165300.1 | AT1G16670.1 |   | Protein kinase superfamily protein | LOC\_Os12g41710.1 | Protein kinase domain containing protein, expressed |
| Sobic.008G038200.1 | AT3G59420.1 | ACR4,CR4 | crinkly4 | LOC\_Os03g43670.1 | TKL\_IRAK\_CR4L.1 - The CR4L subfamily has homology with Crinkly4, expressed |
| Sobic.002G313100.1 | AT3G15220.1 |   | Protein kinase superfamily protein | LOC\_Os07g32400.1 | STE\_PAK\_Ste20\_MST\_like.1 - STE kinases include homologs to sterile 7, sterile 11 and sterile 20 from yeast, expressed |
| Sobic.007G078300.1 | AT4G31170.2 |   | Protein kinase superfamily protein | LOC\_Os08g12750.1 | serine/threonine-protein kinase HT1, putative, expressed |
| Sobic.001G332900.1 | AT2G19130.1 |   | S-locus lectin protein kinase family protein | LOC\_Os03g30890.1 | S-locus-like receptor protein kinase, putative, expressed |
| Sobic.010G055400.1 | AT1G21240.1 | WAK3 | wall associated kinase 3 | LOC\_Os06g07330.1 | OsWAK63 - OsWAK receptor-like protein kinase, expressed |
| Sobic.008G053000.2 | AT3G47570.1 |   | Leucine-rich repeat protein kinase family protein | LOC\_Os11g46970.1 | receptor-like protein kinase 5 precursor, putative, expressed |
| Sobic.009G060700.1 | AT5G56040.2 |   | Leucine-rich receptor-like protein kinase family protein | LOC\_Os05g07740.1 | receptor-like protein kinase 2 precursor, putative, expressed |
| Sobic.010G020600.1 | AT5G07180.1 | ERL2 | ERECTA-like 2 | LOC\_Os06g03970.1 | receptor-like protein kinase 5 precursor, putative, expressed |
| Sobic.009G018450.1 | AT1G11350.1 | CBRLK1,RKS2,SD1-13 | S-domain-1 13 | LOC\_Os11g39490.1 | jacalin-like lectin domain containing protein, expressed |
| Sobic.005G087300.2 | AT1G53050.1 |   | Protein kinase superfamily protein | LOC\_Os11g13860.1 | cyclin-dependent kinase, putative, expressed |
| Sobic.003G345000.1 | AT3G51850.1 | CPK13 | calcium-dependent protein kinase 13 | LOC\_Os01g61590.1 | CAMK\_CAMK\_like.1 - CAMK includes calcium/calmodulin depedent protein kinases, expressed |
| Sobic.003G088100.1 | AT4G00970.1 | CRK41 | cysteine-rich RLK (RECEPTOR-like protein kinase) 41 | LOC\_Os02g48080.1 | cysteine-rich receptor-like protein kinase 7 precursor, putative, expressed |
| Sobic.003G193500.1 | AT4G26100.1 | CK1,CKL1 | casein kinase 1 | LOC\_Os01g38950.1 | CK1\_CaseinKinase\_1.2 - CK1 includes the casein kinase 1 kinases, expressed |
| Sobic.003G027800.1 | AT1G53050.1 |   | Protein kinase superfamily protein | LOC\_Os01g10430.1 | protein kinase family protein, putative, expressed |
| Sobic.008G163300.1 | AT4G14350.3 |   | AGC (cAMP-dependent, cGMP-dependent and protein kinase C) kinase family protein | LOC\_Os12g19290.1 | AGC\_AGC\_other\_NDRh\_TRCd.4 - ACG kinases include homologs to PKA, PKG and PKC, expressed |
| Sobic.004G255800.1 | AT5G47750.1 | D6PKL2,PK5 | D6 protein kinase like 2 | LOC\_Os02g49310.1 | AGC\_PVPK\_like\_kin82y.7 - ACG kinases include homologs to PKA, PKG and PKC, expressed |
| Sobic.006G246001.1 | AT1G34300.1 |   | lectin protein kinase family protein | LOC\_Os04g56080.1 | S-locus-like receptor protein kinase, putative, expressed |
| Sobic.009G063500.1 | AT1G21270.1 | WAK2 | wall-associated kinase 2 | LOC\_Os08g39220.1 | OsWAK75 - OsWAK receptor-like protein kinase, expressed |
| Sobic.005G045800.1 | AT3G18750.1 | ATWNK6,WNK6,ZIK5 | with no lysine (K) kinase 6 | LOC\_Os11g06140.1 | serine/threonine-protein kinase WNK4, putative, expressed |
| Sobic.001G334400.2 | AT2G45910.1 |   | U-box domain-containing protein kinase family protein | LOC\_Os03g31000.1 | protein kinase, putative, expressed |
| Sobic.010G050700.1 | AT2G45910.1 |   | U-box domain-containing protein kinase family protein | LOC\_Os06g06760.2 | protein kinase, putative, expressed |
| Sobic.010G163800.1 | AT4G32300.1 | SD2-5 | S-domain-2 5 | LOC\_Os06g35850.1 | lectin protein kinase family protein, putative, expressed |
| Sobic.001G111600.1 | AT1G73460.1 |   | Protein kinase superfamily protein | LOC\_Os03g51020.1 | expressed protein |
| Sobic.006G081500.1 | AT1G49730.1 |   | Protein kinase superfamily protein | LOC\_Os04g59320.1 | protein kinase domain containing protein, expressed |
| Sobic.001G088900.1 | AT5G20930.1 | TSL | Protein kinase superfamily protein | LOC\_Os03g53880.1 | serine/threonine-protein kinase TOUSLED, putative, expressed |
| Sobic.003G096950.1 | AT4G32300.1 | SD2-5 | S-domain-2 5 | LOC\_Os04g23700.1 | lectin protein kinase family protein, putative, expressed |
| Sobic.004G128200.3 | AT5G10290.1 |   | leucine-rich repeat transmembrane protein kinase family protein | LOC\_Os02g18320.1 | BRASSINOSTEROID INSENSITIVE 1-associated receptor kinase 1 precursor, putative, expressed |
| Sobic.003G438600.1 | AT5G60900.1 | RLK1 | receptor-like protein kinase 1 | LOC\_Os01g73390.1 | expressed protein |
| Sobic.004G310200.1 | AT5G35370.1 |   | S-locus lectin protein kinase family protein | LOC\_Os02g52850.1 | receptor-like protein kinase like protein, putative, expressed |
| Sobic.010G063300.2 | AT3G46920.1 |   | Protein kinase superfamily protein with octicosapeptide/Phox/Bem1p domain | LOC\_Os06g08280.1 | protein kinase domain containing protein, expressed |
| Sobic.006G176800.1 | AT1G63700.1 | EMB71,MAPKKK4,YDA | Protein kinase superfamily protein | LOC\_Os04g47240.1 | STE\_MEKK\_ste11\_MAP3K.17 - STE kinases include homologs to sterile 7, sterile 11 and sterile 20 from yeast, expressed |
| Sobic.004G078500.1 | AT4G22130.1 | SRF8 | STRUBBELIG-receptor family 8 | LOC\_Os02g10110.1 | Leucine Rich Repeat family protein, expressed |
| Sobic.001G315600.1 | AT3G55550.1 |   | Concanavalin A-like lectin protein kinase family protein | LOC\_Os10g38960.1 | lectin-like receptor kinase, putative, expressed |
| Sobic.003G193200.1 | AT4G32300.1 | SD2-5 | S-domain-2 5 | LOC\_Os01g02310.1 | expressed protein |
| Sobic.010G069600.1 | AT3G21220.1 | ATMAP2K\_ALPHA,ATMEK5,ATMKK5,MAP2K\_A,MEK5,MKK5 | MAP kinase kinase 5 | LOC\_Os06g09180.1 | OsMKK5 - putative MAPKK based on amino acid sequence homology, expressed |
| Sobic.010G094900.1 | AT1G18160.1 |   | Protein kinase superfamily protein | LOC\_Os06g12590.1 | protein kinase, putative, expressed |
| Sobic.003G201700.1 | AT5G15080.1 |   | Protein kinase superfamily protein | LOC\_Os01g40590.1 | tyrosine protein kinase domain containing protein, putative, expressed |
| Sobic.008G001300.1 | AT2G37050.3 |   | Leucine-rich repeat protein kinase family protein | LOC\_Os12g01200.3 | senescence-induced receptor-like serine/threonine-protein kinase precursor, putative, expressed |
| Sobic.010G077000.1 | AT2G26330.1 | ER,QRP1 | Leucine-rich receptor-like protein kinase family protein | LOC\_Os06g10230.1 | receptor-like protein kinase 5 precursor, putative, expressed |
| Sobic.005G226000.1 | AT2G19130.1 |   | S-locus lectin protein kinase family protein | LOC\_Os07g36780.1 | S-domain receptor-like protein kinase, putative, expressed |
| Sobic.005G167700.1 | AT3G63340.1 |   | Protein phosphatase 2C family protein | LOC\_Os11g37540.1 | protein phosphatase 2C, putative, expressed |
| Sobic.009G063450.1 | AT3G53840.1 |   | Protein kinase superfamily protein | LOC\_Os08g39220.1 | OsWAK75 - OsWAK receptor-like protein kinase, expressed |
| Sobic.009G254000.1 | AT3G59110.1 |   | Protein kinase superfamily protein | LOC\_Os10g35450.1 | serine/threonine-protein kinase, putative, expressed |
| Sobic.005G017000.1 | AT5G01020.1 |   | Protein kinase superfamily protein | LOC\_Os06g45280.1 | protein kinase APK1B, chloroplast precursor, putative, expressed |
| Sobic.006G167300.1 | AT2G44830.1 |   | Protein kinase superfamily protein | LOC\_Os04g46180.2 | AGC\_PVPK\_like\_kin82y.11 - ACG kinases include homologs to PKA, PKG and PKC, expressed |