**Table S5:**

**Annotated genes within the identified QTL region.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Gene ID** | **Chr.** | **Interval(b p)** | **Gene Annotation** |
| *TraesCS2A01G015800* | 2A | 6997999..7000883 | Cytochrome P450 family protein |
| *TraesCS2A01G015900* | 2A | 7226445..7227752 | 3'-N-debenzoyl-2'-deoxytaxol N-benzoyltransferase |
| *TraesCS2A01G016000* | 2A | 7328301..7329539 | Protein PLANT CADMIUM RESISTANCE 2 |
| *TraesCS2A01G016100* | 2A | 7380550..7387205 | Protein PLANT CADMIUM RESISTANCE 2 |
| *TraesCS2A01G016200* | 2A | 7513301..7514256 | NB-ARC domain-containing disease resistance protein |
| *TraesCS2A01G016300* | 2A | 7526250..7527374 | DUF1635 family protein |
| *TraesCS2A01G016400* | 2A | 7545322..7551157 | Meiosis-specific protein PAIR3 |
| *TraesCS2A01G016500* | 2A | 7687810..7692604 | Pectate lyase |
| *TraesCS2A01G016600* | 2A | 7727401..7728897 | NB-ARC domain-containing disease resistance protein |
| *TraesCS2A01G016700* | 2A | 7741619..7743073 | NB-ARC domain-containing disease resistance protein |
| *TraesCS2A01G016800* | 2A | 7745388..7750024 | NBS-LRR-like resistance protein |
| *TraesCS2A01G016900* | 2A | 7786140..7788064 | NB-ARC domain-containing disease resistance protein |
| *TraesCS2A01G017000* | 2A | 7806803..7809257 | Volume-regulated anion channel subunit LRRC8D |
| *TraesCS2A01G017100* | 2A | 7919298..7921741 | NADH-quinone oxidoreductase subunit F |
| *TraesCS2A01G017200* | 2A | 7923952..7928542 | Alanine--tRNA ligase |
| *TraesCS2A01G017300* | 2A | 8141118..8143112 | F-box family protein |
| *TraesCS2A01G017400* | 2A | 8147731..8150606 | FACT complex subunit SPT16 |
| *TraesCS2A01G017500* | 2A | 8174083..8179611 | Acetyltrans ferase component of pyruvate dehydrogenase complex |
| *TraesCS2A01G017600* | 2A | 8180304..8182767 | Zinc finger CCCH domain-containing protein 4 |
| *TraesCS2A01G017700* | 2A | 8368785..8370967 | Disease resistance protein (TIR-NBS-LRR class) family |
| *TraesCS2A01G017800* | 2A | 8393126..8393368 | Gag polyprotein |
| *TraesCS2A01G017900* | 2A | 8413111..8414571 | Disease resistance protein RGA2 |
| *TraesCS2A01G018000* | 2A | 8543322..8544265 | Retarded palea 1 protein |
| *TraesCS2A01G018100* | 2A | 8627425..8628896 | NB-ARC domain-containing disease resistance protein |
| *TraesCS2A01G018200* | 2A | 8630960..8632420 | Disease resistance protein RGA2 |
| *TraesCS2A01G018300* | 2A | 8682728..8684428 | NB-ARC domain-containing disease resistance protein |
| *TraesCS2A01G018400* | 2A | 8707395..8708876 | NB-ARC domain-containing disease resistance protein |
| *TraesCS2A01G018500* | 2A | 8719540..8723062 | Apyrase |
| *TraesCS2A01G018600* | 2A | 8727312..8728802 | NB-ARC domain-containing disease resistance protein |
| *TraesCS2A01G018700* | 2A | 8735357..8736817 | NBS-LRR-like resistance protein |
| *TraesCS2A01G018800* | 2A | 8755966..8757713 | Cytochrome P450 |
| *TraesCS2A01G018900* | 2A | 8786271..8787710 | NBS-LRR-like resistance protein |
| *TraesCS2A01G019000* | 2A | 8788810..8797508 | NBS-LRR-like resistance protein |
| *TraesCS2A01G019100* | 2A | 8789693..8790547 | NBS-LRR-like protein |
| *TraesCS2A01G019200* | 2A | 8799491..8800345 | NBS-LRR-like protein |
| *TraesCS2A01G019300* | 2A | 8807209..8809005 | WRKY transcription factor |