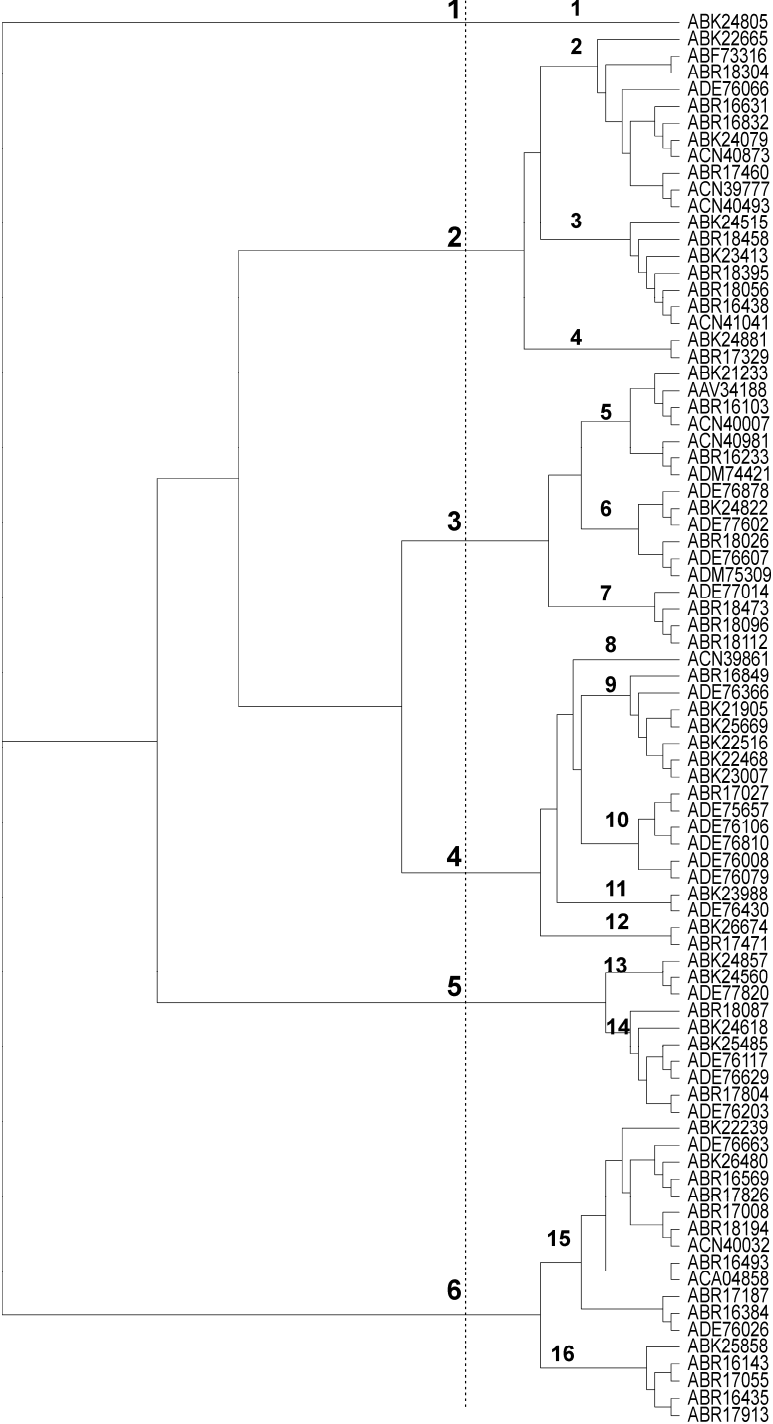


Supplement 3. Phylogenetic tree and cluster description of the selected NB-LRR gene models (full ORF amino acid sequences) based in the spruce ESTs available at the NCBI Database. The phylogenetic tree was constructed using MEGA4 as detailed in Materials and Methods



| Cluster | Group | Description | LRR group |
|---------|-------|---|--|
| 1 | 1 | cd00116: LRR_RI - Leucine-rich repeats (LRRs), ribonuclease inhibitor (RI)-like subfamily - 11-residue segments of the Leucine-Rich Repeats (LxxLxLxxN/CxL) | leucine-rich repeat receptor-like protein kinase, RI-like subfamily |
| 2 | 2 | PLN00113[PLN00113], leucine-rich repeat receptor-like protein kinase Pkinase[pfam00069], Protein kinase domain; Including LRR_RI[cd00116], Leucine-rich repeats (LRRs), ribonuclease inhibitor (RI)-like subfamily. | leucine-rich repeat receptor-like protein kinase, RI-like subfamily |
| | 3 | PLN00113[PLN00113], leucine-rich repeat receptor-like protein kinase Including LRR_RI[cd00116], Leucine-rich repeats (LRRs), ribonuclease inhibitor (RI)-like subfamily | |
| | 4 | PLN00113[PLN00113], leucine-rich repeat receptor-like protein kinase Including LRR_RI[cd00116], Leucine-rich repeats (LRRs), ribonuclease inhibitor (RI)-like subfamily | |
| 3 | 5 | CC-NBS-LRR resistance-like protein, contain NB-ARC[pfam00931], NB-ARC domain and COG4886[COG4886], Leucine-rich repeat (LRR) protein | CC-NBS-LRR resistance-like |
| | 6 | PLN00113[PLN00113], leucine-rich repeat receptor-like protein kinase, including COG4886[COG4886], Leucine-rich repeat (LRR) protein | |
| | 7 | CC-NBS-LRR resistance-like protein, contain NB-ARC[pfam00931], NB-ARC domain; COG4886[COG4886], Leucine-rich repeat (LRR) protein PLN00113[PLN00113], leucine-rich repeat receptor-like protein kinase | |
| 4 | 8 | TIR-NBS-LRR class | TIR-NBS-LRR class; leucine-rich repeat receptor-like protein kinase |
| | 9 | TIR/P-loop/LRR | |
| | 10 | PLN00113[PLN00113], leucine-rich repeat receptor-like protein kinase | |
| | 11 | PLN00113[PLN00113], leucine-rich repeat receptor-like protein kinase | |
| 5 | 12 | COG4886[COG4886], Leucine-rich repeat (LRR) protein; PLN00113[PLN00113], leucine-rich repeat receptor-like protein kinase | RanGTPase/Leucine-rich repeats (LRRs), ribonuclease inhibitor(RI)-like |
| | 13 | F-box/LRR-repeat protein; Ran GTPase/Leucine-rich repeats (LRRs), ribonuclease inhibitor(RI)-like subfamily | |
| 6 | 14 | Leucine-rich repeats (LRRs), ribonuclease inhibitor(RI)-like subfamily | TIR-NBS-LRR class; leucine-rich repeat receptor-like protein kinase |
| | 15 | TIR[pfam01582], TIR domain; The Toll/interleukin-1 receptor (TIR) homology domain; NB-ARC[pfam00931], NB-ARC domain; PLN00113[PLN00113], leucine-rich repeat receptor-like protein kinase | |
| | 16 | LRRNT_2[pfam08263], Leucine rich repeat N-terminal domain; LRR_RI[cd00116], Leucine-rich repeats (LRRs), ribonuclease inhibitor (RI)-like subfamily; PLN00113[PLN00113], leucine-rich repeat receptor-like protein kinase | |