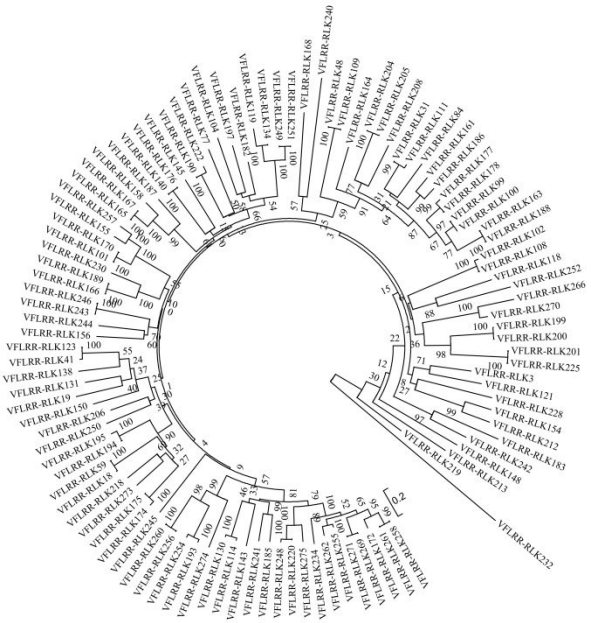
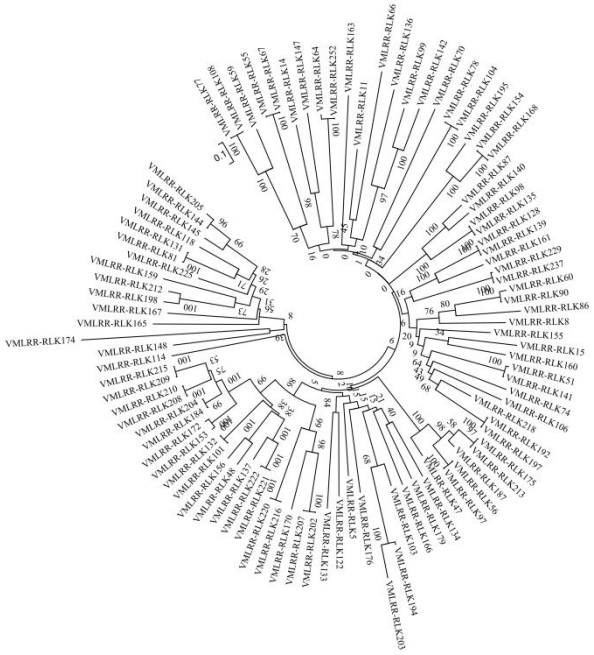
Supplementary Fig.1 Multiple alignment of RLK domain for *LRR-RLK* family from *V. fordii* and *V. montana*

The multiple alignment was performed using Clustal X v.1.83 with the default settings, and the figure was output by DNAMAN v.5.5.2. Residues highlighted in different color represent different amino acids identity, respectively. Amino acid sequences of RLK domain used were list in supplementary Data Set 1.



Supplementary Fig.2 Phylogenetic tree based on the RLK sequences of VfLRR-RLKs

The phylogenetic tree was constructed by MEGA package v5.1 using neighbor-joining method. The numbers at each branch point represent the bootstrap scores (1,000 replicates). Amino acid sequences of RLK domain used were list in supplementary Data Set 1.



Supplementary Fig.3 Phylogenetic tree based on the RLK sequences of VmLRR-RLKs

The phylogenetic tree was constructed by MEGA package v5.1 using neighbor-joining method. The numbers at each branch point represent the bootstrap scores (1,000 replicates). Amino acid sequences of RLK domain used were list in supplementary Data Set 1.

supplementary Data Set 1　Amino acid sequences of RLK domain from *V. fordii* , *V. Montana* and *A. Thaliana*

Amino acid sequences of RLK domain from *V. fordii*

>VFLRR-RLK3

IGGGSIGTVYRTNFEGGISIAVKKLETLGRIRSQDEFEQEIGRLGNLRHPNLVSFQGYYWSSSMQ
LILSEFVPNGNLYDNLHGLDYPGTSTGVGNSELYWSRRFQIALGTARALSYLHHDCRPPILHLNI
KSTNILLDENYEAKLSDYGL

>VFLRR-RLK18

KTFKSEMYSLTEIRHRNIVKMHGFSYLNGSLYFVYEFARGGSLGELLQEKKKAKILNWDLRLK
VIKGVANALSYLHHDCTPAVVHRDISGSNILLDAEFEAKISDFGTARVLRKSESNWTVPVGSYG
YIAPELASTIKVTEKCDVHSFGVVALEVILGKHPHELLLCLQSGGYDMLFSYILDKRLAPPTGPI
VQELVLAVTLALLCIRENPKSRPTMHQVSSEL

>VFLRR-RLK19

MPNGELIAVKKLWKTKRDKESVDSFAAEIQILGHIRHRNIVRLLGYCSNKSVKLLLYNYIPN

>VFLRR-RLK31

SKSFIAECKALRNIRHRNLVKILTYCSSIDFKGNDFKALVFDFMENGSLDTWLH

>VFLRR-RLK41

LGRGRSGIVYMVTLPSGSTVAVKRFKTMDKFSAAAFSSEIATLARIRHRNIVRLL

>VFLRR-RLK48

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GIIIMEFLTKRRPTGLTEEHGIPISLSQLFEKALGNGINGLLQVLDPVIAMNASKDEQTLTELFKL
ALCCTNPNPDDRPNMNEVLSSLNKLK

>VFLRR-RLK59

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VVHRDISGSNILLDAEFEAKISDFGTARVLRKSESNWTVPVGSYGYIAPELASTIKVTEKCDVYS
FGVVALEVILGKHPHELLLCLQSGGYDMLFSYILDKRLAPPTGPIVQELVLAVTLALLCIRENPK
SRPTMHQVSSEL

>VFLRR-RLK77

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ILVGEDFEAKVSDFGLVKMGPIGDQSHVSSQIKGTPGYLDPAYCSSFHLSPFSDVYSFGVILLQL
VSARPAVDSSRSQSNYHIIEWARPSLERGNVAEILDANLLTEPCNMEIMLKMGQLGLRCVVQNP
KDRPTMTQVWQELEE

>VFLRR-RLK84

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GDVYSFGILIMEIFTTRKPTDGMFQGDLNLHNFTVMALPERVMDIVDPQLLFEDNEAGRMQLC
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DSELIPKISDFGLAKLYDDKKTHISTRVAGTIGYLAPEYAMRGHLTEKADVFAFGVVALEVISGR
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SRVIAML

Amino acid sequences of RLK domain from *V. Montana*

>VMLRR-RLK5
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supplementary Data Set 2　Amino acid sequences for motif analysis

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