

Figure S1 Sequence logos of 10 conserved motifs were identified in 124 HMGRs from 29 species using the MEME search tool.

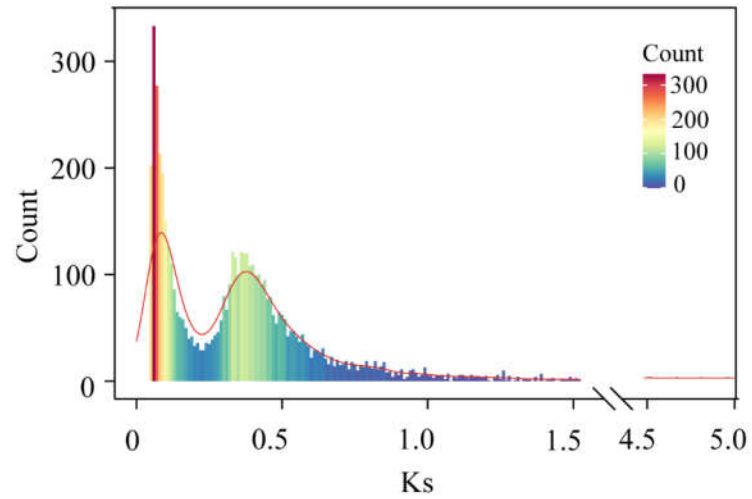


Figure S2 The Ks distributions of *L. erythrorhizon* syntenic gene pairs.

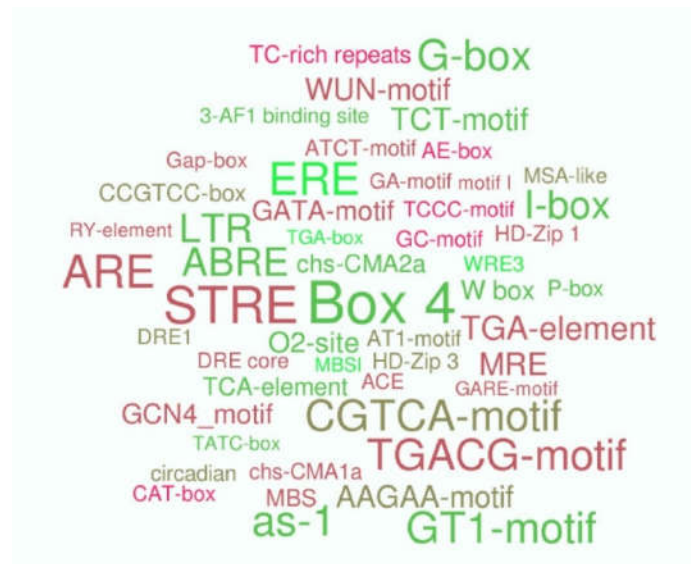


Figure S3 Cloud word graph of cis-acting elements in *LerHMGRs*'s promoters.

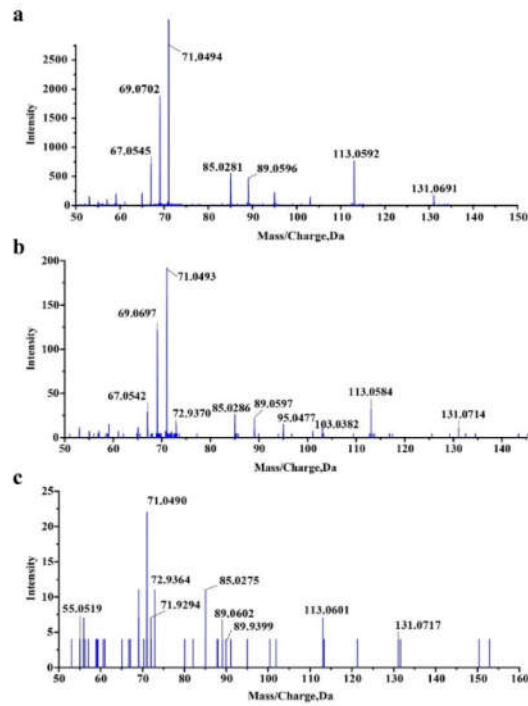


Figure S4 Secondary ion mass spectrometry of the enzymatic reaction productions were detected using UPLC.

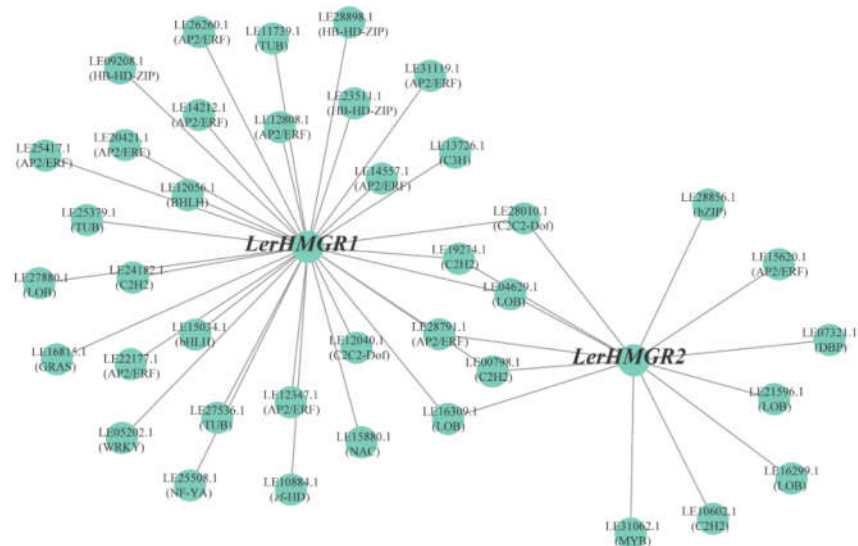


Figure S5 Co-expression network analysis of transcription factors with *LerHMGR1* and *LerHMGR2* in *L. erythrorhizon*.

The edges are drawn when the Pearson correlation coefficient is > 0.65 with p -value < 0.05 .