

1 The establishment of species-specific primers for the molecular identification of ten
2 stored-product psocids based on ITS2 rDNA

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17 **Supplement Material Appendix**

18 **Table S1** The primers for the ITS2 gene amplification of 10 stored-product psocids

19 **Table S2** The ITS2 gene sequence of 10 stored-product psocids (The sequences
20 highlighted in red indicate species-specific primers for ten stored-product psocids)

21 **Table S3** The number of 53 specific sequences submitted to Genebank

22 **Figure S1** The electrophoresis strip for specificity estimation of species-specific
23 primers (LBF and LBR) of *L. bostrychophila* (M: D2000 DNA Marker; 1: *L.*
24 *bostrychophila* (Guangxi); 2: *L. bostrychophila* (Henan); 3: *L. bostrychophila*
25 (Chongqing); 4: *L. bostrychophila* (Berlin); 5: *L. bostrychophila* (USA); 6: *L.*
26 *bostrychophila* (Prague); 7 *L. bostrychophila* (Beijing); 8: *L. bostrychophila*
27 (Guangzhou); 9: *L. entomophila* (Shandong); 10: *L. decolor* (Yunnan); 11: *L. paeta*
28 (Zhejiang); 12: *L. corrodens* (USA); 13: *L. brunnea* (Prague); 14: *L. rufa* (USA); 15:
29 *L. pearmani* (USA); 16: *L. mendax* (Jiangsu); 17: *L. tricolor* (Shandong); CK:
30 Negative control)

31 **Figure S2** The electrophoresis strip for specificity estimation of species-specific
32 primers (21LEnF and 208LEnR-2) of *L. Entomophila* (M: DNA Marker II; 1: *L.*
33 *entomophila* (Beijing); 2: *L. entomophila* (Guangxi); 3: *L. entomophila* (Prague); 4: *L.*
34 *entomophila* (Chongqing); 5: *L. bostrychophila* (Guangxi); 6: *L. bostrychophila*
35 (Yunnan); 7: *L. Decolor* (Yunnan); 8: *L. corrodens* (USA); 9: *L. brunnea* (Prague); 10:
36 *L. rufa* (USA); 11: *L. pearmani* (USA); 12: *L. mendax* (Jiangsu); 13: *L.*
37 *tricolor*(Shandong); CK: Negative control)

38 **Figure S3** The electrophoresis strip for specificity estimation of species-specific

39 primers (164LDeF and 319LDeR) of *L. decolor* (M: DNA Marker II; 1 and 2: *L.*
40 *Decolor* (Yunnan); 3 and 4: *L. Decolor* (Chongqing); 5: *L. Entomophila* (Shandong);
41 6: *L. bostrychophila* (Chongqing); 7: *L. paeta* (Shandong); 8: *L. corrodens* (USA); 9:
42 *L. Brunnea* (Prague); 10: *L. Rufa* (USA); 11: *L. mendax* (Jiangsu); 12: *L. Pearmani*
43 (USA); 13: *L. Tricolor* (Shandong); CK: Negative control)

44 **Figure S4** The electrophoresis strip for specificity estimation of species-specific
45 primers (LPa15F and LPa180R) of *L. paeta* (M: DNA Marker II; 1: *L. paeta*
46 (Caoxian, Shandong); 2: *L. paeta* (Taian, Shandong); 3: *L. paeta* (Zhejiang); 4: *L.*
47 *paeta* (Hubei); 5: *L. paeta* (USA); 6: *L. entomophila* (Shandong); 7: *L. bostrychophila*
48 (Guangxi); 8: *L. decolor* (Yunnan); 9: *L. corrodens* (Prague); 10: *L. brunnea* (USA);
49 11: *L. Rufa* (USA); 12: *L. pearmani* (USA); 13: *L. mendax* (Jiangsu); 14: *L. tricolor*
50 (Shandong); CK: Negative control)

51 **Figure S5** The electrophoresis strip for specificity estimation of species-specific
52 primers (LC170F and LC277R) of *L. corrodens* (M: D2000 DNA Marker; 1: *L.*
53 *corrodens* (Danmark); 2: *L. corrodens* (Prague); 3: *L. corrodens* (USA); 4: *L.*
54 *entomophila* (Shandong); 5: *L. bostrychophila* (Guangzhou); 6: *L. decolor*
55 (Chongqing); 7: *L. paeta* (Hubei); 8: *L. brunnea* (USA); 9: *L. rufa* (USA); 10: *L.*
56 *tricolor* (Shandong); 11: 11: *L. mendax* (Jiangsu); 12: *L. pearmani* (USA); CK:
57 Negative control)

58 **Figure S6** The electrophoresis strip for specificity estimation of species-specific
59 primers (LBr350F and LBr577R) of *L. brunnea* (M: D2000 DNA Marker; 1: *L.*
60 *brunnea* (Prague); 2: *L. brunnea* (USA); 3: *L. entomophila* (Beijiing); 4: *L.*

61 *bostrychophila* (Guangzhou); 5: *L. decolor* (USA); 6: *L. paeta* (Shandong); 7: *L.*
62 *corrodens* (USA); 8: *L. rufa* (USA); 9: *L. pearmani* (USA); 10: *L. tricolor* (Shandong);
63 11: *L. mendax* (Jiangsu); CK: Negative control)

64 **Figure S7** The electrophoresis strip for specificity estimation of species-specific
65 primers (78LRuF-3 and 276LRuR-3) of *L. rufa* (M: D2000 DNA Marker II; 1, 2,
66 and 3: *L. rufa* (USA); 4: *L. entomophila* (Beijing); 5: *L. bostrychophila* (Guangxi); 6:
67 *L. decolor* (Yunnan); 7: *L. paeta* (Prague); 8: *L. corrodens* (USA); 9: *L. brunnea*
68 (USA); 10: *L. mendax* (Jiangsu); 11: *L. pearmani* (USA); 12: *L. tricolor* (Shandong);
69 CK: Negative control)

70

71 **Figure S8** The electrophoresis strip for specificity estimation of species-specific
72 primers (186LPeF and 436LPeR) of *L. pearmani* (M: D2000 DNA Marker; 1 and 2: *L.*
73 *pearmani*(USA); 3: *L. entomophila* (Beijiing); 4: *L. bostrychophila* (Guangxi); 5: *L.*
74 *decolor* (Yunnan); 6: *L. paeta* (Prague); 7: *L. corrodens* (USA); 8: *L. brunnea* (USA);
75 9: *L. rufa* (USA); 10: *L. mendax* (Jiangsu); 11: *L. tricolor* (Shandong); CK: Negative
76 control)

77 **Figure S9** The electrophoresis strip for specificity estimation of species-specific
78 primers (LM60F and LM224R) of *L. mendax* (M: D2000 DNA Marker; 1 and 2: *L.*
79 *mendax* (Jiangsu); 3: *L. entomophila* (Beijiing); 4: *L. bostrychophila* (Guangxi); 5: *L.*
80 *decolor* (Yunnan); 6: *L. paeta* (Prague); 7: *L. corrodens* (USA); 8: *L. brunnea* (USA);
81 9: *L. rufa* (USA); 10: *L. pearmani* (USA); 11: *L. tricolor* (Shandong); CK: Negative
82 control)

83 **Figure S10** The electrophoresis strip for specificity estimation of species-specific
84 primers (LTri20F and LTri249R) of *L. tricolor* (M: D2000 DNA Marker; 1 and 2: *L.*
85 *tricolor* (Shandong); 3: *L. entomophila* (Beijiing); 4: *L. bostrychophila* (Guangxi); 5:
86 *L. decolor* (Yunnan); 6: *L. paeta* (Prague); 7: *L. corrodens* (USA); 8: *L. brunnea*
87 (USA); 9: *L. rufa* (USA); 10: *L. mendax* (Jiangsu); 11: *L. pearmani* (USA); CK:
88 Negative control)

89 **Figure S11** The sensitivity estimation of species-specific primers with different
90 concentration of template DNA of *L. bostrychophila* (M: DNA Marker II; 1: 40ng; 2:
91 20ng; 3: 10ng; 4: 1ng; 5: 0.1ng; 6: 0.01ng; 7:0.001 ng; 8: Negative control)

92 **Figure S12** The sensitivity estimation of species-specific primers with different

93 concentration of template DNA of *L. entomophila* (M: D2000 DNA Marker; 1: 40ng;
94 2: 20ng; 3: 10ng; 4: 1ng; 5: 0.1ng; 6: 0.01ng; 7:0.001 ng; 8: Negative control)

95 **Figure S13** The sensitivity estimation of species-specific primers with different
96 concentration of template DNA of *L. decolor* (M: D2000 DNA Marker; 1: 40ng; 2:
97 20ng; 3: 10ng; 4: 1ng; 5: 0.1ng; 6: 0.01ng; 7:0.001 ng; 8: Negative control)

98 **Figure S14** The sensitivity estimation of species-specific primers with different
99 concentration of template DNA of *L. paeta* (M: D2000 DNA Marker; 1: 40ng; 2: 20ng;
100 3: 10ng; 4: 1ng; 5: 0.1ng; 6: 0.01ng; 7:0.001 ng; 8: Negative control)

101 **Figure S15** The sensitivity estimation of species-specific primers with different
102 concentration of template DNA of *L. corrodens* (M: D2000 DNA Marker; 1: 40ng; 2:
103 20ng; 3: 10ng; 4: 1ng; 5: 0.1ng; 6: 0.01ng; 7:0.001 ng; 8: Negative control)

104 **Figure S16** The sensitivity estimation of species-specific primers with different
105 concentration of template DNA of *L. brunnea* (M: D2000 DNA Marker; 1: 40ng; 2:
106 20ng; 3: 10ng; 4: 1ng; 5: 0.1ng; 6: 0.01ng; 7:0.001 ng; 8: Negative control)

107 **Figure S17** The sensitivity estimation of species-specific primers with different
108 concentration of template DNA of *L. rufa* (M: D2000 DNA Marker; 1: 40ng; 2: 20ng;
109 3: 10ng; 4: 1ng; 5: 0.1ng; 6: 0.01ng; 7:0.001 ng; 8: Negative control)

110 **Figure S18** The sensitivity estimation of species-specific primers with different
111 concentration of template DNA of *L. pearmani* (M: D2000 DNA Marker; 1: 40ng; 2:
112 20ng; 3: 10ng; 4: 1ng; 5: 0.1ng; 6: 0.01ng; 7:0.001 ng; 8: Negative control)

113 **Figure S19** The sensitivity estimation of species-specific primers with different
114 concentration of template DNA of *L. mendax* (M: D2000 DNA Marker; 1: 40ng; 2:

115 20ng; 3: 10ng; 4: 1ng; 5: 0.1ng; 6: 0.01ng; 7:0.001 ng; 8: Negative control)

116 **Figure S20** The sensitivity estimation of species-specific primers with different

117 concentration of template DNA of *L. tricolor* (M: D2000 DNA Marker; 1: 40ng; 2:

118 20ng; 3: 10ng; 4: 1ng; 5: 0.1ng; 6: 0.01ng; 7:0.001 ng; 8: Negative control)

119

120

121 Table S1 The primers for the ITS2 gene amplification of 10 stored-product psocids

Primer	名称	sequence
ITS2 rDNA	Upstream primer	5'- TGTGAACTGCAGGACACATG-3'
ITS2 rDNA	Downstream primer	5'- GTCTTGCCTGCTCTGAG-3'
ITS2 rDNA	Downstream primer	5'-GTCTTGTCTGATCTGAG-3'

122

123 **Table S2** The ITS2 gene sequence of 10 stored-product psocids

124 (1) *L. entomophila*

125 AACATCGATATTTCGAACGCACATTGCTGGGTAGGATTCATTCCGGCCCAACGTCTG
126 TCTGAGGGTTCGGTGATCAATATTAACCGAACGTTCCGTGTGATACGGAACGTGATGGG
127 AAGCTCGAAGTAAGTCGATTTCCGAAACGTAGAAAAATGACGGGTAGAGGAAAGAAA
128 AAGCGAGTGCACGCACAAATTACAGAGTTCGGAAGAACTGTGCTTGCAGTGGTTACA
129 TTTTAAACGTCACGTTAGTAAGCGTAAAACCTTACCACGGACGTATAAAAGAACAACG
130 AATTCTATATCTACTCTTCATCGTC

131

132 (2) *L. bostrychophila*

133 AACATCGATATTTCGAACGCACATTGCCGAGCTAGGATTTTTTCCGGCTCGACGTCTG
134 TCTGAGGGTTCGATAATTTTTATTAAAATAAAGTTTTTCGTTGAGAATAAAATCTCACGGAC
135 TGTGGAAGTGTGCGAAAGATTTGAGTTTTGCTCGAACTTCGTCTTCTGAAAGTTAAGA
136 ACGAGAATACAAGGAGCGAGCTCGTATTTTGC GGTTTTCTGCTTACGTTAGTTTTGT
137 TTTACTGAGCGGATTGTCAGAAAAATCGTAAGAGTTCCTTTTGTAATCTTTTCATCGTC

138

139 (3) *L. decolor*

140 AACATCGATATTTCGAACGCACATTGCGCTCTGGGGAACCTCCGTTCCCGGAGCACGTCT
141 GTCTGAGGGTTCGGTGCTTAAATATAAATTTCCGGAACGATTCTTTTTAACGGAAGGTCGT
142 GATCGAAACGTTGAAAGCTTCCGGGTCGTAAGAAAACCCGCTTTTCGAAATGCACTAG
143 AACCGAGAATCTTCGTAAATGAAGAAGGCGAGAGCTGTAAAGAGCAGCGATACGTGA
144 ATCACGTTTACCGACAGGCGAACGATAACAAGCATGCCCTAAGCACGTCTTGTAATAAAA
145 AAGATTCGAATGCATCGCATCGATCTTTACTCGTCACGTTCAATATATATATAAGTAAC
146 GGGCGAGAGTGCTTTAGGGGAAGCGGTTTCGCATATATTTTTATAACTGTCGTATACGG
147 GAAACGATGATCGCTAAGCTCGTTTAAAATAATTTTTTTTTGCCCCTCGTCTTTTTTTTCGAA
148 ACGAAAAAGATTCTTTTCATCGTC

149

150 (4) *L. paeta*

151 AACATCGATATTTTCGAACGCACATTGCCGAGTTTTGGATTTATCCTGACTCGACGTCT
152 GTCTGAGGGTTCGGTGATATCTATTGAAAGATATTTTCGTTGTTTACCGACGATTTTGAGAG
153 TGTCAGATTCTGCATTGCAGAAATTTGTCTTTTGAAATACGATGTCACGAGGTTCTTGCA
154 AAAGGGTAACTGCATCGGACGGTATTTGGTGTCCAATGCTTTTCGACTTTTCGGAGGTC
155 ACGTTAGTATGATTTTACGAAACGGATTTGGAAAGTCGAGATATTTGCAAAATCTCATCA
156 TCGTC

157

158 (5) *L. corrodens*

159 AACATCGATATTTCGAACGCACATTGCCGAGCTAGGATTTTTTCCGGCTCGACGTCTGT
160 CTGAGGGTTCGATGATTTCTAATAAACAGATTTTCCGTTAGAGTCAATCTATGGAAAAATT

161 GAAAGCCTCGAATTATGTATAATAATTCGTCTTTCGAAATAAAATGTACCCGAGGAAAT
162 CTCA CAAGACGAAAGCAAATTTGTGGCAAATGAATATAGGACGATATATATCGTCTTT
163 GCTGCAAAAACGGTTTCTCTGCGTCACGTTAGTATTAATACCAAACGGATTGTAGAGA
164 ACTGTATTATTGTGAGGATTCTCTTCATCGTC

165

166 (6) *L. brunnea*

167 AACATCGATATTTCGAACGCACATTGCGCTCTGGGGAACCTCCGTTCCCGGAGCACGTCT
168 GTCTGAGGGTTCGATGCTTACTTGTA AAAATTTAGAACGCTGGTTATTTTTTTTCGAATCGC
169 AAACGATTGAAAAAAAATCTTTTTAACGGCGTGATAAAATGATGAAAGCTTCGGGT
170 CGCTCTCCGCGTAAGCGGAGGGTTCGCTCTTTCGAAATGCACGATCCCGAGATATCGCT
171 CGGAAATAAAACGAGTTCGAAGAAGACCGATACGTATAATAGTCTCGAGCCGCCAGCG
172 GCGAAAGCGATCACGTCTTGTTTTTTTTACGTGCCCGCGATACGATGCGTTTTGAACCG
173 AGATCCTTGTTACGAATGCACAAACGTAATAATAATAAAGGATCGAAGAAGGTCTT
174 CCTCTCGTCACGTTAGTGGTTATTTTGATATGTAACGTGAAACGGTCGAGATGGAAAAC
175 GTATCGCGGGTAAAGACGAGAAAAAGAGGAGGCTTTCGAACCGTGTTTTTATCGCGGC
176 TCTCGAAACGAAGATCGGTTTTTCGTGTACAAGCGTTTTGTTAGTAGTACTCGTAAAC
177 AGAATTCGGCGATTTCTTTTCATCGTC

178

179 (7) *L. rufa*

180 AACATCGATATTTCGAACGCACATTGCGCTCTGGGGAACCTCCGTTCCCGGAGCACGTCT
181 GTCTGAGGGTTCGGTGCTTAATGTTAAATGTCGGAACGCTTGACGGCGTGATCGAAAC
182 GTTGAAAGCTTCGGGTTCGTGAAAATTAAGACCCGTCTTTCCAAATGCACGAAAGACCG
183 AGAATCTTATGAGGAAGAAGAACTATAGAGAACGATACGTCAATCTCACGGCTGCT
184 CGTAAAGCAAATTAAGTACATTAGCGTACCGATAGGTCGTAAATTTTTTTTTAAAG
185 CGAGCCCGTAAAGTAAACGAAAAAGAAAAGATCGCACGCATCGTCGATCTTCCTCG
186 TCACGTTTCATGATGATACATAGCAAATAAATAAATAAAGAAAAACGGTCGAGGGTACT
187 GCGGGGATTCGGTATAGCGTGAGGAAACGAAAATCGTTACTCGTCGAAATTGTGTTTTT
188 TATTTTTTTTTTACCTCAAGAAAAGATTCTTTTCATCGTC

189

190 (8) *L. pearmani*

191 AACATCGATATTTCGAACGCACATTGCGCTCTGGGGAACCTCCGTTCCCGGAGCACGTCT
192 GTCTGAGGGTTCGATGCTTAATTGTA AAAATCTAGAACGCCGTCTCTCGCACGATTAAGTT
193 CGGGGGGAGCGGTTCGTGATAAAAGACTCCGTTGAATGCTTCGAGCTCGCGAGAGCCC
194 GTCATTCCAAATGCACGAAACGAGATTCTCACAAGAATTTCGAACGAGTCGGAAGAT
195 GAGAGAAACGATACGTAAATCGTACTTGCTATCTACGGAAGCCAATATTGCCCCGTGAT
196 ACGAAACATGTCTTCCTCGTCACGTTAGTCAGTTTGTAAATAATAAGCAAAAATAACGGG
197 CGAGACGTTGATGTATCGCCGCGGCGGCTAGCAGTAGATCGTACGGAACGAAAATCG
198 TTTACTCGTTTGAAGAATGGTAGCCGTTTTCGTTGGTAGCCTTTCGACCAAACCGAA
199 GTGAGATTCTTTTCATCGTC

200

201 (9) *L. mendax*

202 AACATCGATATTTTCGAACGCACATTGCGGTCCTTGGAACCTTTGTTCCCGGACCACGTCT

203 GTCTGAGGGTCGGTGTGCTATTAGAACATTTTTTATTCGTTTCGCTTCGGCACGAA

204 TAATGTGGAGGTTTCGAGTATCGGCTCGTCTTCCTAAACAGAATAATGCGAGAATTCCG

205 TAAGCGGGAATTTATGGGTTTTGTCCTCGCGTCACGTTTCTGAAATTAAGAGCAGCGT

206 TGACGGACTTGCGAGGTAAAGCTCTGTTTCGGCGAAATAGACGGAAATTCTAATTCATC

207 GTC

208

209 (10) *L. tricolor*

210 AACATCGATATTTTCGAACGCACATTGCCGAACTTTGAATTTATTCTGGTTCGACGTCT

211 GTCTGAGGGTCGATGAAAATTATTGAAATATTTACCGTTAGATGTAATGTCTACGGTTAT

212 TGAAAGTTACGAATTTCTCGGAAATTCGTCTTTCGAAATTCATATGTCCCCGAGAATC

213 GTACATGAAAGAGAATGTCTCAGTAAATGGTATGTTATTTGCTGCATTGGGCATATTTCT

214 GCTTCACGTTAGTAACCAAACGGATAGTAGAAAAATGTCTTCGTGGAACGATTTCTC

215 ATCTTCGTCTCAGATCAGGAATCACTAGTGAATTCGCGGCCGCCTGCAGGTC

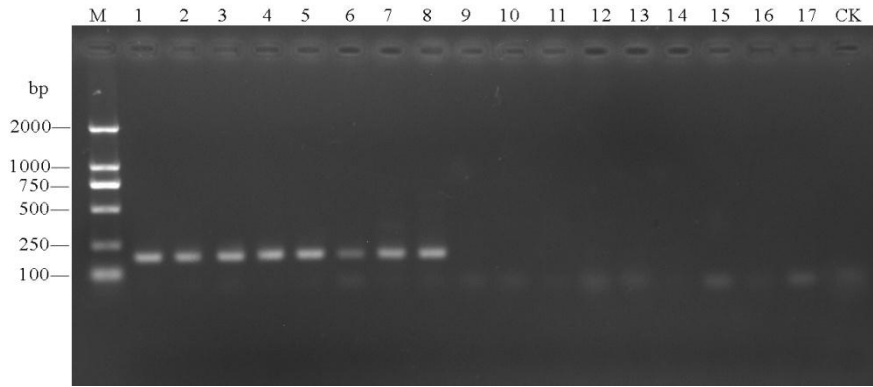
216

Population	Locations	Authors	No. GenBank
<i>L. entomophila</i> _BJ- P. R. China	Beijing,P. R.China	Cui Bingyi, Li Zhihong	KC707588
<i>L. entomophila</i> _HuB- P. R. China	HuBei,P. R. China	Cui Bingyi, Li Zhihong	KC707590
<i>L. entomophila</i> _GX- P. R. China	Guangxi,P. R.China	Cui Bingyi, Li Zhihong	KC707589
<i>L. entomophila</i> _SD- P. R. China	Shandong,P. R.China	Cui Bingyi, Li Zhihong	KC707591
<i>L. bostrychophila</i> _BJ- P. R. China	Beijing,P. R.China	Cui Bingyi, Li Zhihong	JQ966091
<i>L. bostrychophila</i> _GX- P. R. China	Guangxi,P. R.China	Cui Bingyi, Li Zhihong	JQ966093
<i>L. bostrychophila</i> _GZ- P. R. China	Guangzhou,P.R.China	Cui Bingyi, Li Zhihong	JQ966096
<i>L.bostrychophila</i> _HeN- P. R. China	Henan,P. R.China	Cui Bingyi, Li Zhihong	JQ966097
<i>L. bostrychophila</i> _CQ- P. R. China	Chongqing,P. R.China	Cui Bingyi, Li Zhihong	JQ966099
<i>L. bostrychophila</i> _P-CZ	Prague,CZ	Cui Bingyi, Li Zhihong	JQ966092
<i>L. bostrychophila</i> _CZ	Central Bohemia, CZ	Cui Bingyi, Li Zhihong	JQ966095
<i>L. bostrychophila</i> _USA	Manhattan,USA	Cui Bingyi, Li Zhihong	JQ966094
<i>L. bostrychophila</i> _GER	Berlin ,GER	Cui Bingyi, Li Zhihong	JQ966098
<i>L. decolor</i> _CQ- P. R. China	Chongqing,P. R.China	Cui Bingyi, Li Zhihong	KC707592
<i>L. decolor</i> _YN- P. R. China	Yunnan, P. R.China	Cui Bingyi, Li Zhihong	KC707593
<i>L. decolor</i> _P-CZ	Prague,CZ	Cui Bingyi, Li Zhihong	KC707594
<i>L. decolor</i> _P-CZ	Prague,CZ	Cui Bingyi, Li Zhihong	KC707595
<i>L. decolor</i> _P-CZ	Prague,CZ	Cui Bingyi, Li Zhihong	KC707596
<i>L. decolor</i> _USA	USA	Cui Bingyi, Li Zhihong	KC707597
<i>L. decolor</i> _USA	USA	Cui Bingyi, Li Zhihong	KC707598
<i>L. decolor</i> _USA	USA	Cui Bingyi, Li Zhihong	KC707599
<i>L. paeta</i> _USA	USA	Cui Bingyi, Li Zhihong	GU563533
<i>L. paeta</i> _HeB-P. R.China	Hebei,P.R.China	Cui Bingyi, Li Zhihong	KC707604
<i>L. paeta</i> _SDT-P. R.China	Taian,Shandong,P.R.China	Cui Bingyi, Li Zhihong	KC707605
<i>L. paeta</i> _SDT-P. R.China	Taian,Shandong,P.R.China	Cui Bingyi, Li Zhihong	KC707606
<i>L. paeta</i> _SDT-P. R.China	Taian,Shandong,P.R.China	Cui Bingyi, Li Zhihong	KC707607
<i>L. paeta</i> _SDC-P. R.China	Caoxian,Shandong,P.R.China	Cui Bingyi, Li Zhihong	KC707619
<i>L. paeta</i> _ZJ-P. R.China	Zhejiang,P. R.China	Cui Bingyi, Li Zhihong	KC707612
<i>L. paeta</i> _ZJ-P. R.China	Zhejiang,P. R.China	Cui Bingyi, Li Zhihong	KC707613
<i>L. paeta</i> _HuB-P. R.China	Hubei,P. R.China	Cui Bingyi, Li Zhihong	KC707614
<i>L. paeta</i> _HuB-P. R.China	Hubei,P. R.China	Cui Bingyi, Li Zhihong	KC707615
<i>L. paeta</i> _HeN-P. R.China	Henan,P. R.China	Cui Bingyi, Li Zhihong	KC707616
<i>L. paeta</i> _HeN-P. R.China	Henan,P. R.China	Cui Bingyi, Li Zhihong	KC707617
<i>L. paeta</i> _HeN-P. R.China	Henan,P. R.China	Cui Bingyi, Li Zhihong	KC707618
<i>L. paeta</i> _CZ	Prague,CZ	Cui Bingyi, Li Zhihong	KC707603

<i>L. paeta</i> _USA	USA	Cui Bingyi, Li Zhihong	KC707608
<i>L. paeta</i> _USA	USA	Cui Bingyi, Li Zhihong	KC707609
<i>L. paeta</i> _USA	USA	Cui Bingyi, Li Zhihong	KC707610
<i>L. paeta</i> _USA	USA	Cui Bingyi, Li Zhihong	KC707611
<i>L. corrodens</i> _CZ	Prague,CZ	Cui Bingyi, Li Zhihong	KC707623
<i>L. corrodens</i> _DMK.	Danmark	Cui Bingyi, Li Zhihong	KC707620
<i>L. corrodens</i> _DMK.	Danmark	Cui Bingyi, Li Zhihong	KC707621
<i>L. corrodens</i> _DMK.	Danmark	Cui Bingyi, Li Zhihong	KC707622
<i>L. corrodens</i> _USA	USA	Cui Bingyi, Li Zhihong	KC707624
<i>L. corrodens</i> _USA	USA	Cui Bingyi, Li Zhihong	KC707625
<i>L. brunnea</i> _P-CZ	Prague,CZ	Cui Bingyi, Li Zhihong	KC707626
<i>L. brunnea</i> _USA	USA	Cui Bingyi, Li Zhihong	KC707626
<i>L. mendax</i> _JS-P. R. China	Jiangsu,P. R.China	Cui Bingyi, Li Zhihong	KC707629
<i>L. pearmani</i> _USA	USA	Cui Bingyi, Li Zhihong	KC707628
<i>L. tricolor</i> _SD-P. R. China	Shandong,P. R.China	Cui Bingyi, Li Zhihong	KC707630
<i>L. tricolor</i> _SD-P. R. China	Shandong,P. R.China	Cui Bingyi, Li Zhihong	KC707631
<i>L. tricolor</i> _SD-P. R. China	Shandong,P. R.China	Cui Bingyi, Li Zhihong	KC707632
<i>L. rufa</i> _USA	USA	Cui Bingyi, Li Zhihong	KC707629

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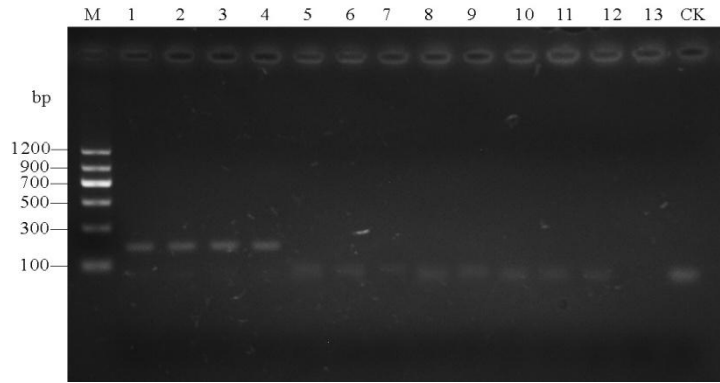
219



220

221 **Figure S1** The electrophoresis strip for specificity estimation of species-specific primers (LBF and LBR) of *L.*
 222 *bostrychophila* (M: D2000 DNA Marker; 1: *L. bostrychophila* (Guangxi); 2: *L. bostrychophila* (Henan); 3: *L.*
 223 *bostrychophila* (Chongqing); 4: *L. bostrychophila* (Berlin); 5: *L. bostrychophila* (USA); 6: *L. bostrychophila*
 224 (Prague); 7 *L. bostrychophila* (Beijing); 8: *L. bostrychophila* (Guangzhou); 9: *L. Entomophila* (Shandong); 10: *L.*
 225 *Decolor* (Yunnan); 11: *L. paeta* (Zhejiang); 12: *L. corrodens* (USA); 13: *L. Brunnea* (Prague); 14: *L. Rufa* (USA);
 226 15: *L. Pearmani* (USA); 16: *L. mendax* (Jiangsu); 17: *L. Tricolor* (Shandong); CK: Negative control)

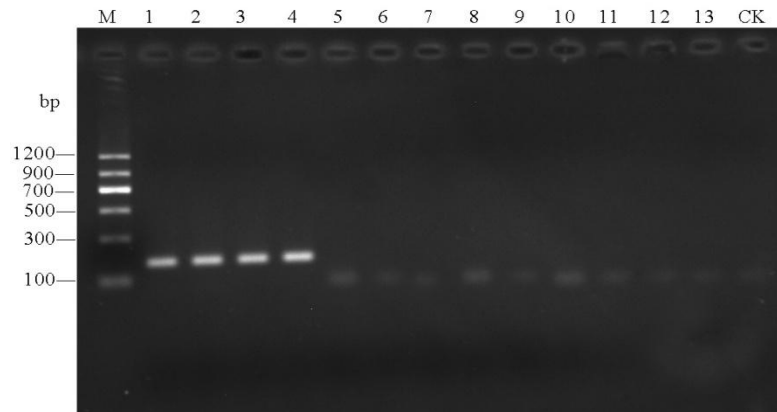
227



228

229 **Figure S2** The electrophoresis strip for specificity estimation of species-specific primers (21LEnF and 208LEnR-2)
 230 of *L. Entomophila* (M: DNA Marker II; 1: *L. entomophila* (Beijing); 2: *L. entomophila* (Guangxi); 3: *L.*
 231 *entomophila* (Prague); 4: *L. entomophila* (Chongqing); 5: *L. bostrychophila* (Guangxi); 6: *L. bostrychophila*
 232 (Yunnan); 7: *L. Decolor* (Yunnan); 8: *L. corrodens* (USA); 9: *L. brunnea* (Prague); 10: *L. rufa* (USA); 11: *L.*
 233 *pearmani* (USA); 12: *L. mendax* (Jiangsu); 13: *L. tricolor*(Shandong); CK: Negative control)

234



235

236 **Figure S3** The electrophoresis strip for specificity estimation of species-specific primers (164LDeF and 319LDeR)

237 of *L. decolor* (M: DNA Marker II; 1 and 2: *L. Decolor* (Yunnan); 3 and 4: *L. Decolor* (Chongqing); 5: *L.*

238 *Entomophila* (Shandong); 6: *L. bostrychophila* (Chongqing); 7: *L. paeta* (Shandong); 8: *L. corrodens* (USA); 9: *L.*

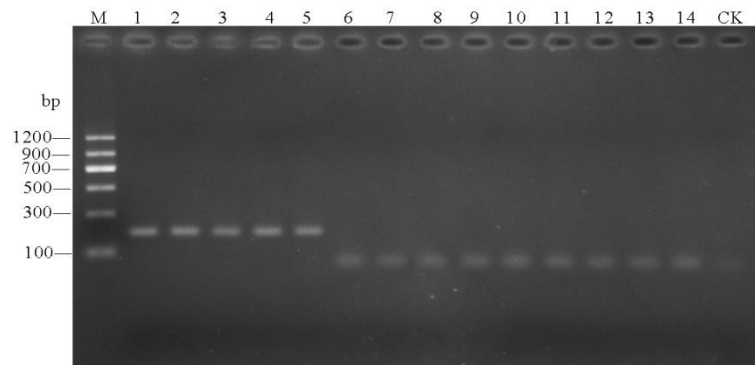
239 *Brunnea* (Prague); 10: *L. Rufa* (USA); 11: *L. mendax* (Jiangsu); 12: *L. Pearmani* (USA); 13: *L. Tricolor*

240 (Shandong); CK: Negative control)

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244

245 **Figure S4** The electrophoresis strip for specificity estimation of species-specific primers (LPa15F and LPa180R)

246 of *L. paeta* (M: DNA Marker II; 1: *L. paeta* (Caoxian, Shandong); 2: *L. paeta* (Taian, Shandong); 3: *L.*

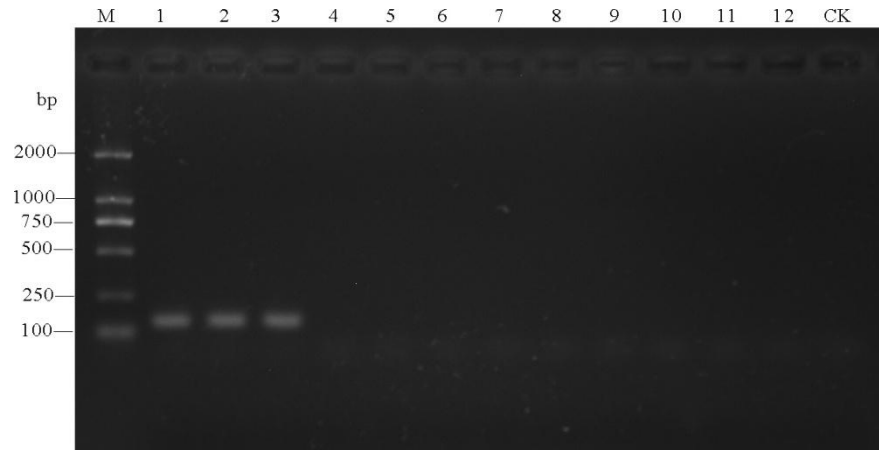
247 *paeta*(Zhejiang); 4: *L. paeta* (Hubei); 5: *L. paeta* (USA); 6: *L. entomophila* (Shandong); 7: *L. bostrychophila*

248 (Guangxi); 8: *L. decolor* (Yunnan); 9: *L. corrodens* (Prague); 10: *L. brunnea* (USA); 11: *L. Rufa* (USA); 12: *L.*

249 *pearmani* (USA); 13: *L. mendax* (Jiangsu); 14: *L. tricolor* (Shandong); CK: Negative control)

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254 **Figure S5** The electrophoresis strip for specificity estimation of species-specific primers (LC170F and LC277R)

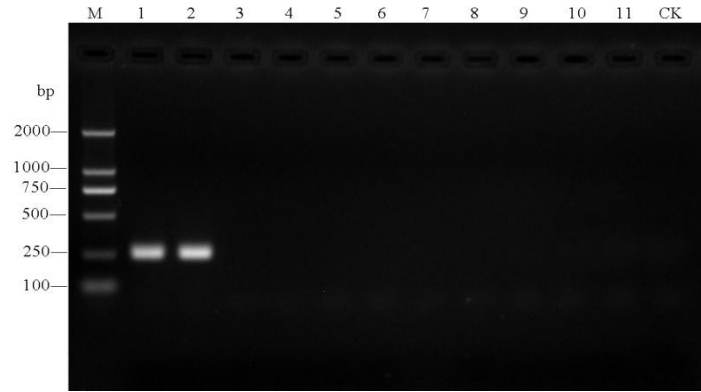
255 of *L. corrodens* (M: D2000 DNA Marker; 1: *L. corrodens* (Denmark); 2: *L. corrodens* (Prague); 3: *L. corrodens*

256 (USA); 4: *L. entomophila* (Shandong); 5: *L. bostrychophila* (Guangzhou); 6: *L. decolor* (Chongqing); 7: *L. paeta*

257 (Hubei); 8: *L. brunnea* (USA); 9: *L. rufa* (USA); 10: *L. tricolor* (Shandong); 11: 11: *L. mendax* (Jiangsu); 12: *L.*

258 *pearmani* (USA); CK: Negative control)

259



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261

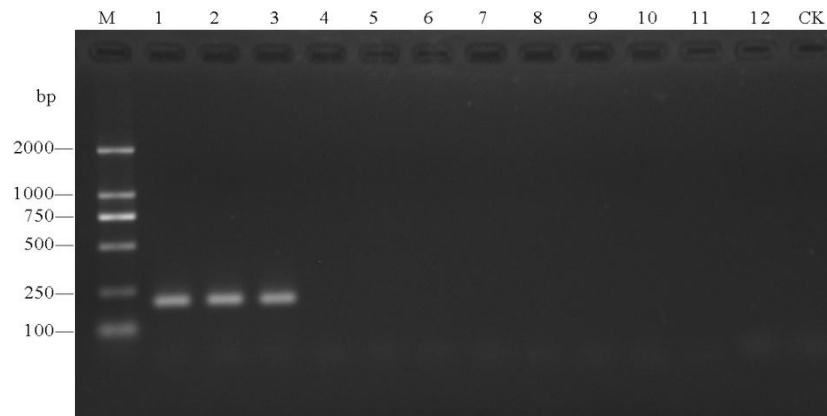
262 **Figure S6** The electrophoresis strip for specificity estimation of species-specific primers (LBr350F and LBr577R)

263 of *L. brunnea* (M: D2000 DNA Marker; 1: *L. brunnea* (Prague); 2: *L. brunnea* (USA); 3: *L. entomophila* (Beijiing);

264 4: *L. bostrychophila* (Guangzhou); 5: *L. decolor* (USA); 6: *L. paeta* (Shandong); 7: *L. corrodens* (USA); 8: *L. rufa*

265 (USA); 9: *L. pearmani* (USA); 10: *L. tricolor* (Shandong); 11: *L. mendax* (Jiangsu); CK: Negative control)

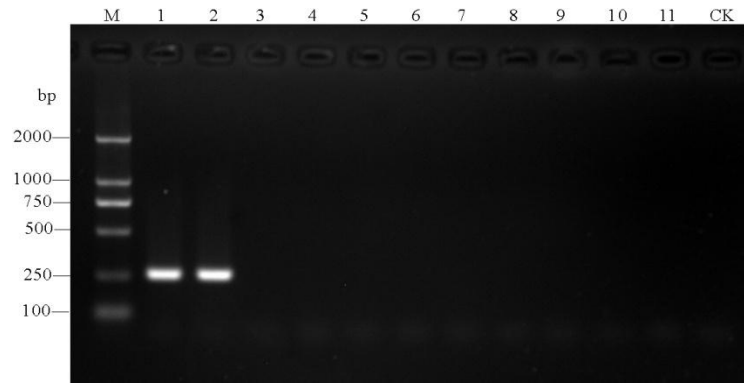
266



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269

270 **Figure S7** The electrophoresis strip for specificity estimation of species-specific primers (78LRuF-3 and
271 276LRuR-3) of *L. rufa* (M: D2000 DNA Marker II; 1, 2, and 3: *L. rufa* (USA); 4: *L. entomophila* (Beijing); 5: *L.*
272 *bostrychophila* (Guangxi); 6: *L. decolor* (Yunnan); 7: *L. paeta* (Prague); 8: *L. corrodens* (USA); 9: *L. brunnea*
273 (USA); 10: *L. mendax* (Jiangsu); 11: *L. pearmani* (USA); 12: *L. tricolor* (Shandong); CK: Negative control)
274



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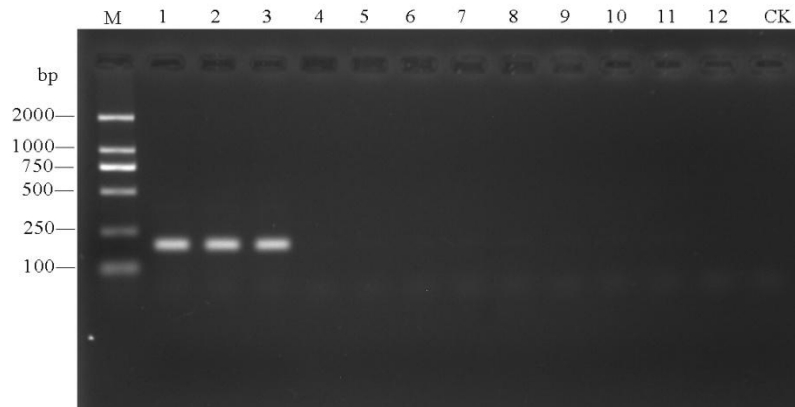
277 **Figure S8** The electrophoresis strip for specificity estimation of species-specific primers (186LPeF and 436LPeR)

278 of *L. pearmani* (M: D2000 DNA Marker; 1 and 2: *L. pearmani*(USA); 3: *L. entomophila* (Beijiing); 4: *L.*

279 *bostrychophila* (Guangxi); 5: *L. decolor* (Yunnan); 6: *L. paeta* (Prague); 7: *L. corrodens* (USA); 8: *L. brunnea*

280 (USA); 9: *L. rufa* (USA); 10: *L. mendax* (Jiangsu); 11: *L. tricolor* (Shandong); CK: Negative control)

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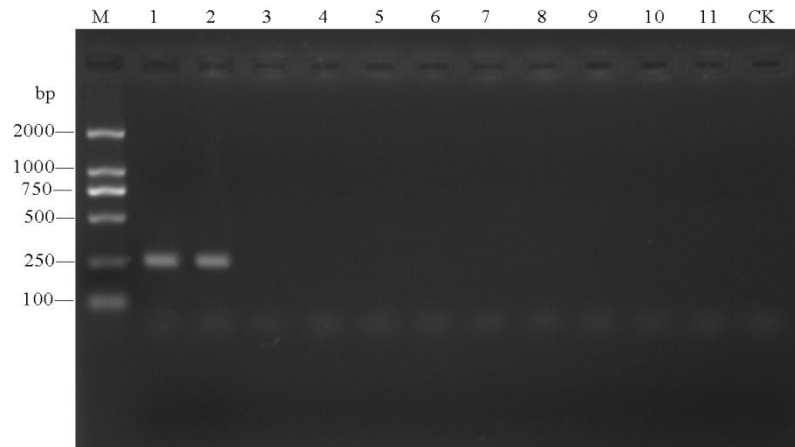
284 **Figure S9** The electrophoresis strip for specificity estimation of species-specific primers (LM60F and LM224R)

285 of *L. mendax* (M: D2000 DNA Marker; 1 and 2: *L. mendax* (Jiangsu); 3: *L. entomophila* (Beijing); 4: *L.*

286 *bostrychophila* (Guangxi); 5: *L. decolor* (Yunnan); 6: *L. paeta* (Prague); 7: *L. corrodens* (USA); 8: *L. brunnea*

287 (USA); 9: *L. rufa* (USA); 10: *L. pearmani* (USA); 11: *L. tricolor* (Shandong); CK: Negative control)

288



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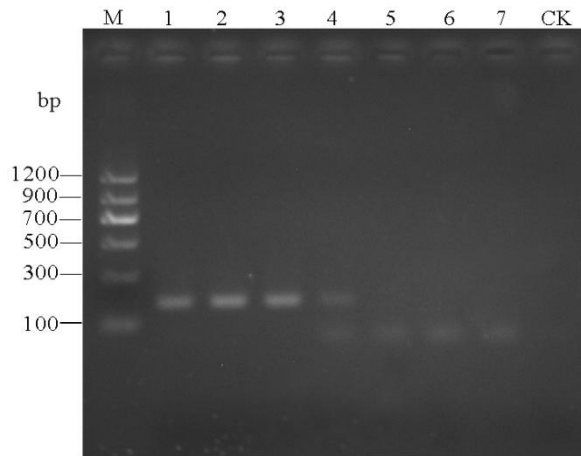
291 **Figure S10** The electrophoresis strip for specificity estimation of species-specific primers (LTri20F and LTri249R)

292 of *L. tricolor* (M: D2000 DNA Marker; 1 and 2: *L. tricolor* (Shandong); 3: *L. entomophila* (Beijiing); 4: *L.*

293 *bostrychophila* (Guangxi); 5: *L. decolor* (Yunnan); 6: *L. paeta* (Prague); 7: *L. corrodens* (USA); 8: *L. brunnea*

294 (USA); 9: *L. rufa* (USA); 10: *L. mendax* (Jiangsu); 11: *L. pearmani* (USA); CK: Negative control)

295



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298 **Figure S11** The sensitivity estimation of species-specific primers with different concentration of template DNA of

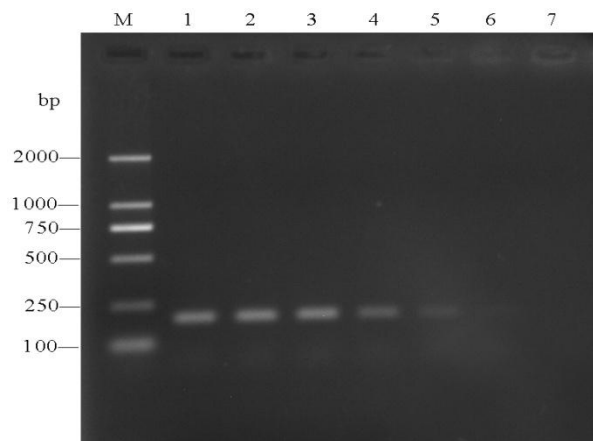
299 *L. bostrychophila* (M: DNA Marker II; 1: 40ng; 2: 20ng; 3: 10ng; 4: 1ng; 5: 0.1ng; 6: 0.01ng; 7:0.001 ng; 8:

300

Negative control)

301

302



303

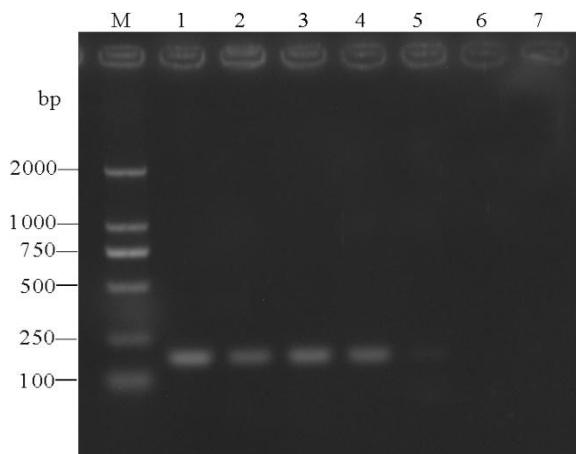
304 **Figure S12** The sensitivity estimation of species-specific primers with different concentration of template

305 DNA of *L. entomophila* (M: D2000 DNA Marker; 1: 40ng; 2: 20ng; 3: 10ng; 4: 1ng; 5: 0.1ng; 6: 0.01ng; 7:0.001

306

ng; 8: Negative control)

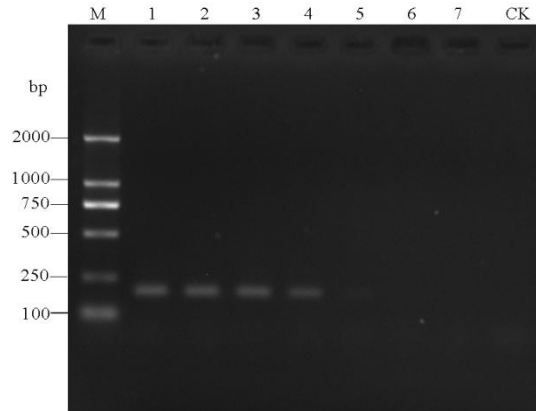
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308

309 **Figure S13** The sensitivity estimation of species-specific primers with different concentration of template
310 DNA of *L. decolor* (M: D2000 DNA Marker; 1: 40ng; 2: 20ng; 3: 10ng; 4: 1ng; 5: 0.1ng; 6: 0.01ng; 7:0.001 ng; 8:
311 Negative control)

312

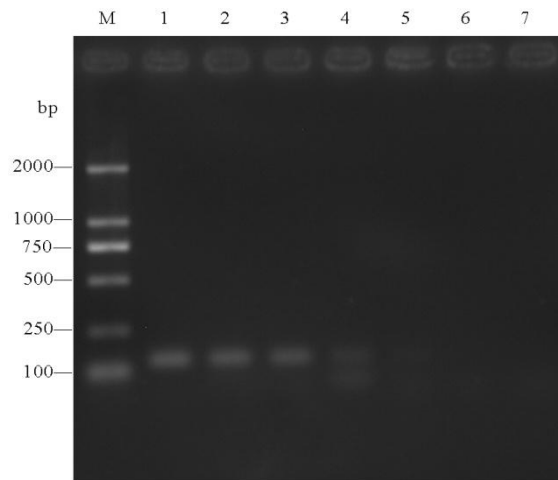


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314

315 **Figure S14** The sensitivity estimation of species-specific primers with different concentration of template
316 DNA of *L. paeta* (M: D2000 DNA Marker; 1: 40ng; 2: 20ng; 3: 10ng; 4: 1ng; 5: 0.1ng; 6: 0.01ng; 7:0.001 ng; 8:
317 Negative control)

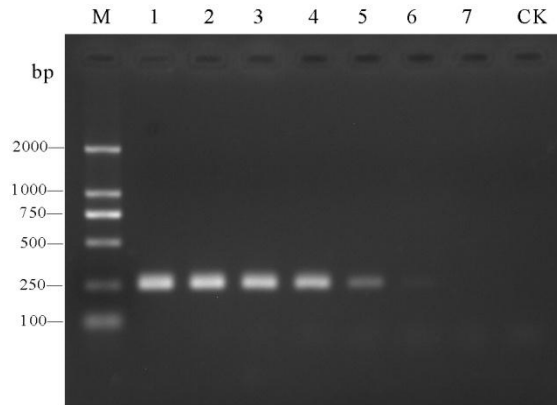
318



319

320 **Figure S15** The sensitivity estimation of species-specific primers with different concentration of template
321 DNA of *L. corrodens* (M: D2000 DNA Marker; 1: 40ng; 2: 20ng; 3: 10ng; 4: 1ng; 5: 0.1ng; 6: 0.01ng; 7:0.001 ng;
322 8: Negative control)

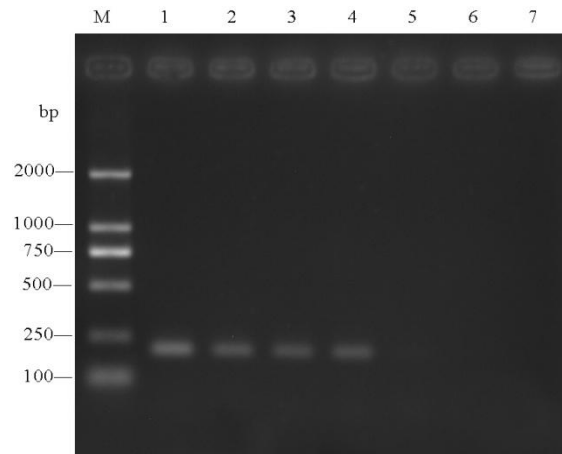
323



324

325 **Figure S16** The sensitivity estimation of species-specific primers with different concentration of template
 326 DNA of *L. brunnea* (M: D2000 DNA Marker; 1: 40ng; 2: 20ng; 3: 10ng; 4: 1ng; 5: 0.1ng; 6: 0.01ng; 7:0.001 ng; 8:
 327 Negative control)

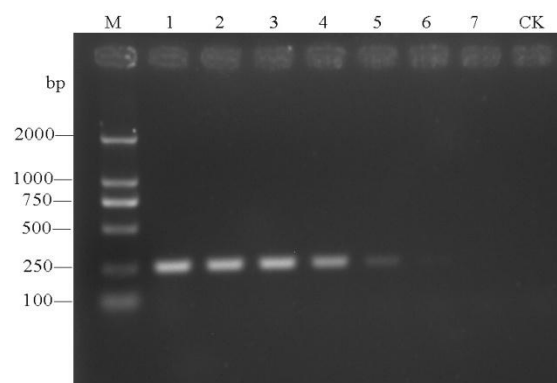
328



329

330 **Figure S17** The sensitivity estimation of species-specific primers with different concentration of template
 331 DNA of *L. rufa* (M: D2000 DNA Marker; 1: 40ng; 2: 20ng; 3: 10ng; 4: 1ng; 5: 0.1ng; 6: 0.01ng; 7:0.001 ng; 8:
 332 Negative control)

333



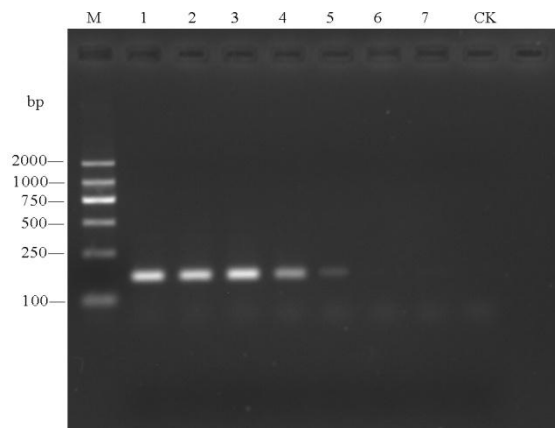
334

335 **Figure S18** The sensitivity estimation of species-specific primers with different concentration of template
 336 DNA of *L. pearmani* (M: D2000 DNA Marker; 1: 40ng; 2: 20ng; 3: 10ng; 4: 1ng; 5: 0.1ng; 6: 0.01ng; 7:0.001 ng;

337

8: Negative control)

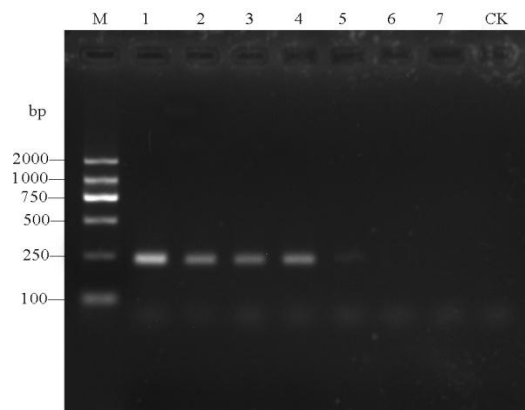
338



339

340 **Figure S19** The sensitivity estimation of species-specific primers with different concentration of template
341 DNA of *L. mendax* (M: D2000 DNA Marker; 1: 40ng; 2: 20ng; 3: 10ng; 4: 1ng; 5: 0.1ng; 6: 0.01ng; 7:0.001 ng; 8:
342 Negative control)

343



344

345 **Figure S20** The sensitivity estimation of species-specific primers with different concentration of template
346 DNA of *L. tricolor* (M: D2000 DNA Marker; 1: 40ng; 2: 20ng; 3: 10ng; 4: 1ng; 5: 0.1ng; 6: 0.01ng; 7:0.001 ng; 8:
347 Negative control)