

黄连(*Coptis chinensis*)之参考 DNA 序列资料表

摘要	资料
学名	<i>Coptis chinensis</i> Franch.
建立数据所使用之 参照物料	<ul style="list-style-type: none"> ● 植物凭证标本 ● 中药材标本: 黄连
植物凭证标本 (数量 / 产地)	<ul style="list-style-type: none"> ● 3 / 中国重庆市江津区 ● 1 / 中国重庆市石柱土家族自治县 ● 2 / 中国四川省大邑县
中药材标本 (数量 / 产地)	<ul style="list-style-type: none"> ● 5 / 中国重庆市江津区 ● 6 / 中国重庆市石柱土家族自治县 ● 3 / 中国四川省大邑县
标本总数量	<ul style="list-style-type: none"> ● 20
标本来源	<ul style="list-style-type: none"> ● 政府中药检测中心标本馆 ● 香港中药材标准(“港标”)计划
建立数据的方法	<ul style="list-style-type: none"> ● GCMTI RD-5:20202020 (修改的 ITS2 PCR 循环条件, 见附录 1)

摘要	资料
DNA 条形码长度	<ul style="list-style-type: none"><li data-bbox="647 320 1302 454">● 核糖体 DNA 第二内部转录间隔区(ITS2)为 203–206 bp<li data-bbox="647 510 1286 645">● 叶绿体 <i>psbA-trnH</i> 基因间区(<i>psbA-trnH</i>)为 214–292 bp<li data-bbox="647 701 1334 835">● 叶绿体二磷酸核酮糖羧化酶大链(<i>rbcL</i>)为 553 bp

附录1

修改的ITS2 PCR循环条件

温度	时间	循环次数
94°C	5分钟	1
94°C 60°C 72°C	30秒 30秒 45秒	40
72°C	10分钟	1
4°C	∞	--

参考DNA序列

植物标本

DNA资料

核糖体 DNA 第二内部转录间隔区(ITS2)

批次编号 BI230328

```
>23RD27-1B ITS2
CGCACAGCGTCGCACCCCGCCACTCCTGCTGGACGGG
GAGCGGAGATTGGCCCCCGGGCACCCGYTGACCGG
CCGGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCT
ATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTTC
CGCCGCCACAGTAGGGACRGATCGACCCCGGACGC
CGTACCGACGGCGCTCACCTG
```

备注: 碱基位置 66, 166

叶绿体 *psbA-trnH* 基因间区(*psbA-trnH*)

批次编号 BI230328

```
>23RD27-1B_psbA-trnH
TCCACAAATGGCTAGGTCTTAGTGTACGCGAGTTTAA
GTGTATATGAGTTGTTGAAGTTGCAGGAGTAATACCA
AAATCTTGTTTGTAAAGAAATTTGGTATTACTCCWG
CATTTTTTTTTTTTTAGTAAAAATAAGAAAATAGAA
TAGATCTTTGGAAAATCTTGATTATAATATGTTCTGT
ATTATTTTCTTATAAAAATAATATATATAAATACAAAT
CTAAAATATGTTCTTAACTTTTTATTTTTATAAAGAT
AATATATAATATAAAGTAGAAGGGCGGA
```

备注: 碱基位置 111

叶绿体二磷酸核酮糖羧化酶大链(*rbcL*)

批次编号 BI230328

```
>23RD27-1B_rbcL
AAGTGTGGCTTCAAAGCGGGCGTTAAAGATTACAAA
TTGACTTATTATACTCCTCAATATACACCCAAAGATA
CTGATACCCTGGCAGCATTCCGAGTAACTCCTCAACC
TGGAGTTCACCCGAAGAAGCGGGGGCTGCTGTAGCT
GCCGAATCTTACAGGTACATGGACAACCTGTGTGGA
CCGATGGACTTACCAGCCTTGATCGTTACAAAGGACG
ATGCTACGACATCGAGCCCGTTGCTGGAGAAGAAAAT
CAATATATTTGTATGTAGCCTATCCTTTAGACCTTTT
TGAAGAGGGTCTGTACTAACATGTTTACTTCCATTG
TGGGTAATGTTTTGGGTTCAAAGCGCTACGCGCTCT
ACGTTTGGAGGATCTGCGAATTCCTGTTGCTTATGTTA
AAACTTTCCAGGGGCGCCCATGGTATCCAAGTTGA
GAGAGATAAATTGAACAAGTATGGTCGTCCTTATTG
GGATGACTATTAACCAAAAATTGGGATTATCTGCTA
AGAACTACGGTAGAGCGGTTTATGAATGTCTC
```

参考资料

参照物料	植物凭证标本
学名	<i>Coptis chinensis</i> Franch.
实验室编号	23RD27
样品标记	23RD27-1B
产地	中国重庆市江津区
相对应之中药材标本	23RD131
已鉴别	是
备注	ITS2: 66Y, 166R; psbA-trnH: 111W

图像



参考DNA序列

植物标本

DNA资料

核糖体 DNA 第二内部转录间隔区(ITS2)

批次编号 BI230328

```
>23RD28-1B ITS2
CGCACAGCGTCGCACCCCGCCACTCCTGCTGGACGGG
GAGCGGAGATTGGCCCCCGGGCACCCGCTGCACGG
CCGGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCT
ATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTTCT
CGCCGCCACAGTAGGGACRGATCGACCCCGGACGC
CGTACCGACGGCGCTCACCTG
```

备注: 碱基位置 166

叶绿体 *psbA-trnH* 基因间区(*psbA-trnH*)

批次编号 BI230328

```
>23RD28-1B_psbA-trnH
TCCACAAATGGCTAGGCTTAGTGTACGCGAGTTTTA
GTGTATATGAGTTGTTGAAGTTGCAGGAGTAATACCA
AAATCTTAACAAAACAAGAATTTTGGTATTACTCCW
GCATTTTTTTTTTTTTTAGTAAAAATAAGAAAATAGA
ATAGATCTTTGGAAAATCTTGATTATAATATGTTCTG
TATTATTTTCTTATAAAAAATAATATTATATAATACAA
TCTAAATATGTTYTAACTTTTTATTTTTATAAAGA
TAATATAAAGTAGAAGGG
```

备注: 碱基位置 111, 238

叶绿体二磷酸核酮糖羧化酶大链(*rbcL*)

批次编号 BI230328

```
>23RD28-1B_rbcL
AAGTGTGGCTTCAAAGCGGGCGTTAAAGATTACAAA
TTGACTTATTATACTCCTCAATATACACCCAAAGATA
CTGATACCCTGGCAGCATTCCGAGTAACTCCTCAACC
TGGAGTTCACCCGGAAGAAGCGGGGGCTGCTGTAGCT
GCCGAATCTTACAGGTACATGGCAACTGTGTGGA
CCGATGGACTTACAGCCTTGATCGTTACAAAAGGACG
ATGCTACGACATCGAGCCCGTTGCTGGAGAAGAAAAT
CAATATATTTGTATGTAGCCTATCCTTTAGACCTTTT
TGAAGAGGGTCTGTACTAACATGTTACTTCCATTG
TGGGTAATGTTTTGGGTTCAAAGCGCTACGCGCTCT
ACGTTTGGAGGATCTGCGAATTCCTGTTGCTTATGTTA
AACTTTCCAGGGCCGCCCCATGGTATCCAAGTTGA
GAGAGATAAATTGAACAAGTATGGTCGTCCTTATTG
GGATGTACTATTAACCAAAATTTGGGATTATCTGCTA
AGAACTACGGTAGAGCGGTTTATGAATGTCTC
```

参考资料

参照物料	植物凭证标本
学名	<i>Coptis chinensis</i> Franch.
实验室编号	23RD28
样品标记	23RD28-1B
产地	中国重庆市石柱土家族自治县
相对应之中药材标本	23RD33
已鉴别	是
备注	ITS2: 166R; <i>psbA-trnH</i> : 111W, 238Y

图像



参考DNA序列

植物标本

DNA资料

核糖体 DNA 第二内部转录间隔区(ITS2)

批次编号 BI230328

```
>23RD29-1B ITS2
CGCACAGCGTCGCACCCCGCCACTCCTGCTGGACGGG
GAGCGGAGATTGGCCCCCGGGCACCCGYTGACCGG
CCGGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCT
ATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTTC
CGCCGCCACAGTAGGGACGGATCGACCCCGGACGC
CGTACCGACGGCGCTCACCTG
```

备注: 碱基位置 66

叶绿体 *psbA-trnH* 基因间区(*psbA-trnH*)

批次编号 BI230328

```
>23RD29-1B_psbA-trnH
TCCACAAATGGCTAGGTCTTAGTGTACGCGAGTTTTA
GTGTATATGAGTTGTTGAAGTTCAGGAGTAATACCA
AAATCTTGTTTTGTTAAGAAATTTGGTATTACTCCWG
CATTTTTTTTTTTTTAGTAAAAATAAGAAAATAGAA
TAGATCTTTGGAAAATTCTTGATTATAATATGTTCTGT
ATTATTTTCTTATAAAAATAATATTATATAATAACAAT
CTAAAATATGTTCTTAACACTTTTTATTTTTATAAAGAT
AATATAAAGTAGAAG
```

备注: 碱基位置 111

叶绿体二磷酸核酮糖羧化酶大链(*rbcL*)

批次编号 BI230328

```
>23RD29-1B_rbcL
AAGTGTGGCTTCAAAGCGGGCGTTAAAGATTACAAA
TTGACTTATTATACTCCTCAATATACACCCAAAGATA
CTGATACCCTGGCAGCATTCCGAGTAACTCCTCAACC
TGGAGTTCACCCGGAAGAAGCGGGGGCTGCTGTAGCT
GCCGAATCTTCTACAGGTACATGGACAACCTGTGTGGA
CCGATGGACTTACCAGCCTTGATCGTTACAAAGGACG
ATGCTACGACATCGAGCCCGTTGCTGGAGAAGAAAAT
CAATATATTTGTTATGTAGCCTATCCTTTAGACCTTTT
TGAAGAGGGTTCTGTTACTAACATGTTTACTTCCATTG
TGGGTAATGTTTTGGGTTCAAAGCGCTACGCGCTCT
ACGTTTGGAGGATCTGCGAATTCCTGTTGCTTATGTTA
AAACTTTCCAGGGGCGCCCATGGTATCCAAGTTGA
GAGAGATAAATTGAACAAGTATGGTCGTCCCCTATTG
GGATGTAATAAACCAAAATTGGGATTATCTGCTA
AGAATACTCGGTAGAGCGTTTATGAATGTCTC
```

参考资料

参照物料	植物凭证标本
学名	<i>Coptis chinensis</i> Franch.
实验室编号	23RD29
样品标记	23RD29-1B
产地	中国四川省大邑县
相对应之中药材标本	23RD132
已鉴别	是
备注	ITS2: 66Y; <i>psbA-trnH</i> : 111W

图像



参考DNA序列

植物标本

DNA资料

核糖体 DNA 第二内部转录间隔区(ITS2)

批次编号 BI230328

```
>23RD30-1A ITS2
CGCACAGCGTCGCACCCCGCCACTCCTGCTGGACGGG
GAGCGGAGATTGGCCCCCGGGCACCCGCTGCACGG
CCGGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCT
ATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTTCT
CGCCGCCACAGTAGGGACAGATCGACCCCGGACGC
CGTACCGACGGCGCTCACCTG
```

叶绿体 *psbA-trnH* 基因间区(*psbA-trnH*)

批次编号 BI230328

```
>23RD30-1A psbA-trnH
TCCACAAATGGCTAGGTCTTAGTGTACGGAGTTTTA
GTGTATATGAGTTGTTGAAGTTGCAGGAGTAATACCA
AAATCTTGTGTTTGTAAAGAAATTTGGTATTACTCCWG
CATTTTTTTTTTTTTTAGTAAAAATAAGAAAATAGAA
TAGATCTTTGAAAATTCTTGATTATAATATGTTCTGT
ATTATTTCTTATAAAAATAATATTATATAATAACAAT
CTAAATATGTTYTTAACACTTTTTATTTTTATAAAGAT
AATATATAATATAAAG
```

备注: 碱基位置 111, 238

叶绿体二磷酸核酮糖羧化酶大链(*rbcL*)

批次编号 BI230328

```
>23RD30-1A rbcL
AAGTGTGGCTTCAAAGCGGGCGTTAAAGATTACAAA
TTGACTTATTATACTCCTCAATATACCCAAAGATA
CTGATACCCTGGCAGCATTCCGAGTAACCTCAACC
TGGAGTTCCACCGAAGAAGCGGGGGCTGCTGTAGCT
GCCGAATCTTCTACAGGTACATGGACAACCTGTGTGGA
CCGATGGACTTACCAGCCTTGATCGTTACAAAGGACG
ATGCTACGACATCGAGCCCGTTGCTGGAGAAGAAAAT
CAATATATTTGTTATGTAGCCTATCCTTTAGACTTTT
TGAAGAGGGTCTGTTACTAACATGTTTACTTCCATTG
TGGGTAATGTTTTGGGTTCAAAGCGCTACGCGCTCT
ACGTTTGGAGGATCTGCGAATCCTGTTGCTTATGTTA
AACTTTCCAGGGCCGCCCATGGTATCCAAGTTGA
GAGAGATAAATTGAACAAGTATGGTCGTCCCCTATTG
GGATGTACTATTAAACCAAAATTGGGATTATCTGCTA
AGAACTACGGTAGAGCGGTTTATGAATGTCTC
```

参考资料

参照物料	植物凭证标本
学名	<i>Coptis chinensis</i> Franch.
实验室编号	23RD30
样品标记	23RD30-1A
产地	中国四川省大邑县
相对应之中药材标本	23RD132
已鉴别	是
备注	psbA-trnH: 111W, 238Y

图像



参考DNA序列

植物标本

DNA资料

核糖体 DNA 第二内部转录间隔区(ITS2)

批次编号 BI230328

```
>23RD31-1B ITS2
CGCACAGCGTCGCACCCCGCCACTCYTGCTGGACGGG
GAGCGGAGATTGGCCCCCGGGCACCCGCTGCACGG
CCGGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCT
ATTATCGTGGTGATCAAAGCTGAGATAAGGCGTTC
CGCCGCCACAGTAGGGACAGATCGACCCCGGACGC
CGTACCGACGGCGCTCACCTG
```

备注: 碱基位置 26

叶绿体 *psbA-trnH* 基因间区(*psbA-trnH*)

批次编号 BI230328

```
>23RD31-1B_psbA-trnH
TCCACAAATGGCTAGGCTTAGTGTACGCGAGTTTTA
GTGTATATGAGTTGTTGAAGTTGCAGGAGTAATACCA
AAATCTTGTTTTGTTAAGAAATTTGGTATTACTCCTG
CATTTTTTTTTTTTTTAGTAAAAATAAGAAAATAGAA
TAGATCTTTGGAAAATCTTGATTATAATATGTTCTGT
ATTATTTTCTTATAAAAATAATATTATATAATAACAAT
CTAAAATATGTTCTTAACACTTTTTATTTTTATAAAGAT
AATATATAATAAAG
```

叶绿体二磷酸核酮糖羧化酶大链(*rbcL*)

批次编号 BI230328

```
>23RD31-1B_rbcL
AAGTGTGGCTTCAAAGCGGGCGTTAAAGATTACAAA
TTGACTTATTATACTCCTCAATATACACCCAAAGATA
CTGATACCCTGGCAGCATTCCGAGTAACTCCTCAACC
TGGAGTTCCACCGAAGAAGCGGGGGCTGCTGTAGCT
GCCGAATCTTCTACAGGTACATGGACAACCTGTGTGGA
CCGATGGACTTACCAGCCTTGATCGTTACAAAGGACG
ATGCTACGACATCGAGCCCGTTGCTGGAGAAGAAAAT
CAATATATTTGTTATGTAGCCTATCCTTTAGACCTTT
TGAAGAGGGTCTGTTACTAACATGTTTACTTCCATTG
TGGGTAATGTTTTGGGTTCAAAGCGCTACGCGCTCT
ACGTTTGGAGGATCTGCGAATCCTGTTGCTTATGTTA
AACTTTCCAGGGCCGCCCATGGTATCCAAGTTGA
GAGAGATAAATTGAACAAGTATGGTCGTCCCCTATTG
GGATGTACTATTAAACCAAAATGGGATTATCTGCTA
AGAACTACGGTAGAGCGGTTTATGAATGTCTC
```

参考资料

参照物料	植物凭证标本
学名	<i>Coptis chinensis</i> Franch.
实验室编号	23RD31
样品标记	23RD31-1B
产地	中国重庆市江津区
相对应之中药材标本	23RD133
已鉴别	是
备注	ITS2: 26Y

图像



参考DNA序列

植物标本

DNA资料

核糖体 DNA 第二内部转录间隔区(ITS2)

批次编号 BI230328

```
>23RD32-1B ITS2
CGCACAGCGTCGCACCCCGCCACTCYTGCTGGACGGG
GAGCGGAGATTGGCCCCCGGGCACCCGCTGCACGG
CCGGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCT
ATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTTC
CGCCGCCACAGTAGGGACAGATCGACCCCGGACGC
CGTACCGACGGCGCTCACCTG
```

备注: 碱基位置 26

叶绿体 *psbA-trnH* 基因间区(*psbA-trnH*)

批次编号 BI230328

```
>23RD32-1B_psbA-trnH
CAAATGGCTAGGTCTTAGTGTACGCGAGTTTTAGTGT
ATATGAGTTGTTGAAGTTCAGGAGTAATACCAAAAT
TCTTGTGTTGTTAAGAATTTGGTATTACTCCWGCATT
TTTTTTTTTTTTAGTAAAAATAAGAAAATAGAATAG
ATCTTTGGAAAATTCTTGATTATAATATGTTCTGTATT
ATTTTCTATAAAAATAATATTATATATAATACAATCTA
AATATGTTCTTAACACTTTTTATTTTATAAAGATAAT
ATAAAGTAGAAGGGCGGA
```

备注: 碱基位置 107

叶绿体二磷酸核酮糖羧化酶大链(*rbcL*)

批次编号 BI230328

```
>23RD32-1B_rbcL
AAGTGTGGCTTCAAAGCGGGCGTTAAAGATTACAAA
TTGACTTATTATACTCCTCAATATACACCCAAAGATA
CTGATACCCTGGCAGCATTCCGAGTAACTCCTCAACT
TGGAGTTCACCCGGAAGAAGCGGGGGCTGCTGTAGCT
GCCGAATCTTCTACAGGTACATGGACAACCTGTGTGGA
CCGATGGACTTACCAGCCTTGATCGTTACAAAGGACG
ATGCTACGACATCGAGCCCGTTGCTGGAGAAGAAAAT
CAATATATTTGTATGTAGCCTATCCTTTAGACCTTTT
TGAAGAGGGTTCTGTACTAACATGTTTACTTCCATTG
TGGGTAATGTTTTGGGTTCAAAGCGCTACGCGCTCT
ACGTTTGGAGGATCTGCGAATTCCTGTTGCTTATGTTA
AAACTTTCCAGGGGCGCCCATGGTATCCAAGTTGA
GAGAGATAAATTGAACAAGTATGGTCGTCCCCTATTG
GGATGACTATTAACCAAAAATTGGGATTATCTGCTA
AGAACTACGGTAGAGCGGTTTATGAATGTCTC
```

参考资料

参照物料	植物凭证标本
学名	<i>Coptis chinensis</i> Franch.
实验室编号	23RD32
样品标记	23RD32-1B
产地	中国重庆市江津区
相对应之中药材标本	23RD133
已鉴别	是
备注	ITS2: 26Y; <i>psbA-trnH</i> : 107W

图像



参考DNA序列

中药材

DNA资料

核糖体 DNA 第二内部转录间隔区(ITS2)

批次编号 BI230328-2

```
>23RD33-1B ITS2
CGCACAGCGTCGCACCCCGCCACTCCTGCTGGACGGG
GAGCGGAGATTGGCCCCCGGGCACCCGYTGCACGG
CCGGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCT
ATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTTC
CGCCGCCACAGTAGGGACAGATCGACCCCGGACGC
CGTACCGACGGCGCTCACCTG
```

备注: 碱基位置 66

叶绿体 *psbA-trnH* 基因间区(*psbA-trnH*)

批次编号 BI230328-2

```
>23RD33-1B_psbA-trnH
TCCACAAATGGCTAGGTCTTAGTGTACGCGAGTTTTA
GTGTATATGAGTTGTTGAAGTTGCAGGAGTAATACCA
AAATCTTAACAAAACAAGAATTTTGGTATTACTCCW
GCATTTTTTTTTTTTTTAGTAAAAATAAGAAAATAGA
ATAGATCTTTGGAAAATTCTTGATTATAATATGTTCTG
TATTATTTTCTTATAAAAATAATATTATATATAATACAA
TCTAAATATGTTYTAACTTTTTATTTTTATAAAGA
TAATATAAAGTAGAAGGGCGGA
```

备注: 碱基位置 111, 238

叶绿体二磷酸核酮糖羧化酶大链(*rbcL*)

批次编号 BI230328-2

```
>23RD33-1B_rbcL
AAGTGTGGCTTCAAAGCGGGCGTTAAAGATTACAAA
TTGACTTATTATACTCCTCAATATACACCCAAAGATA
CTGATACCCTGGCAGCATTCCGAGTAACTCCTCAACC
TGGAGTTCACCCGAAGAAGCGGGGGCTGCTGTAGCT
GCCGAATCTTCTACAGGTACATGGACAACCTGTGTGGA
CCGATGGACTTACCAGCCTTGATCGTTACAAAGGACG
ATGCTACGACATCGAGCCCGTTGCTGGAGAAGAAAAT
CAATATATTTGTATGTAGCCTATCCTTTAGACCTTTT
TGAAGAGGGTTCTGTACTAACATGTTACTTCCATTG
TGGGTAATGTTTTGGGTTCAAAGCGCTACGCGCTCT
ACGTTTGGAGGATCTGCGAATTCCTGTTGCTTATGTTA
AAACTTTCCAGGGGCGCCCATGGTATCCAAGTTGA
GAGAGATAAATTGAACAAGTATGGTCGTCCCCTATTG
GGATGTACTATTAACCAAAATTGGGATTATCTGCTA
AGAACTACGGTAGAGCGGTTTATGAATGTCTC
```

参考资料

参照物料	中药材黄连标本
学名	<i>Coptis chinensis</i> Franch.
实验室编号	23RD33
样品标记	23RD33-1B
产地	中国重庆市石柱土家族自治县
相对应之植物凭证标本	23RD28
已鉴别	是
备注	ITS2: 66Y; <i>psbA-trnH</i> : 111W, 238Y

图像

正面图



背面图



参考DNA序列

中药材

DNA资料

核糖体 DNA 第二内部转录间隔区(ITS2)

批次编号 BI230328-2

```
>23RD33-2B ITS2
CGCACAGCGTCGCACCCCGCCACTCCTGCTGGACGGG
GAGCGGAGATTGGCCCCCGGGCACCCGYTGCACGG
CCGGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCT
ATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTTCT
CGCCGCCACAGTAGGGACRGATCGACCCCGGACGC
CGTACCGACGGCGCTCACCTG
```

备注: 碱基位置 66, 166

叶绿体 *psbA-trnH* 基因间区(*psbA-trnH*)

批次编号 BI230328-2

```
>23RD33-2B_psbA-trnH
TCCACAAATGGCTAGGTCTTAGTGTACGCGAGTTTTA
GTGTATATGAGTTGTTGAAGTTGCAGGAGTAATACCA
AAATCTTAACAAAACAAGAATTTTGGTACTCCW
GCATTTTTTTTTTTTAGTAAAAATAAGAAAATAGAA
TAGATCTTTGGAAAATTCTTGATTATAATATGTTCTGT
ATTATTTTCTTATAAAAATAATATATATAATAACAAT
CTAAAATATGTTYTTAACACTTTTTATTTTTATAAAGAT
AATATAAAGTAGAA
```

备注: 碱基位置 111, 237

叶绿体二磷酸核酮糖羧化酶大链(*rbcL*)

批次编号 BI230328-2

```
>23RD33-2B_rbcL
AAGTGTGGCTTCAAAGCGGGCGTTAAAGATTACAAA
TTGACTTATTATACTCCTCAATATACACCCAAAGATA
CTGATACCCTGGCAGCATTCCGAGTAACTCCTCAACC
TGGAGTTCACCGGAAGAAGCGGGGGCTGCTGTAGCT
GCCGAATCTTCTACAGGTACATGGACAACCTGTGTGGA
CCGATGGACTTACCAGCCTTGATCGTTACAAAGGACG
ATGCTACGACATCGAGCCCGTTGCTGGAGAAGAAAAT
CAATATATTTGTATGTAGCCTATCCTTTAGACCTTTT
TGAAGAGGGTCTGTACTAACATGTTTACTTCCATTG
TGGGTAATGTTTTGGGTTCAAAGCGCTACGCGCTCT
ACGTTTGGAGGATCTGCGAATTCCTGTTGCTTATGTTA
AAACTTTCCAGGGGCGCCCATGGTATCCAAGTTGA
GAGAGATAAATTGAACAAGTATGGTCGTCCCCTATTG
GGATGTACTATTAACCAAAAATTGGGATTATCTGCTA
AGAACTACGGTAGAGCGGTTTATGAATGTCTC
```

参考资料

参照物料	中药材黄连标本
学名	<i>Coptis chinensis</i> Franch.
实验室编号	23RD33
样品标记	23RD33-2B
产地	中国重庆市石柱土家 族自治县
相对应之植物凭证 标本	23RD28
已鉴别	是
备注	ITS2: 66Y, 166R; psbA-trnH: 111W, 237Y

图像

正面图



背面图



参考DNA序列

中药材

DNA资料

核糖体 DNA 第二内部转录间隔区(ITS2)

批次编号 BI230328-2

```
>23RD33-3B ITS2
CGCACAGCGTCGCACCCCGCCACTCCTGCTGGACGGG
GAGCGGAGATTGGCCCCCGGGCACCCGTTGCACGG
CCGGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCT
ATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTTC
CGCCGCCACAGTAGGGACRGATCGACCCCGGACGC
CGTACCGACGGCGCTCACCTG
```

备注: 碱基位置 166

叶绿体 *psbA-trnH* 基因间区(*psbA-trnH*)

批次编号 BI230328-2

```
>23RD33-3B_psbA-trnH
TCCACAAATGGCTAGGTCTTAGTGTACGCGAGTTTTA
GTGTATATGAGTTGTTGAAGTTGCAGGAGTAATACCA
AAATCTTGTTTGTAAAGAAATTTGGTATTACTCCWG
CATTTTTTTTTTTTTTAGTAAAAATAAGAAAATAGAA
TAGATCTTTGGAAAATCTTGATTATAATATGTTCTGT
ATTATTTCTTATAAAAATAATATTATATAATAACAAT
CTAAAATATGTTCTTAACTTTTTATTTTTATAAAGAT
AATATAAAGTAGAAGGGCGG
```

备注: 碱基位置 111

叶绿体二磷酸核酮糖羧化酶大链(*rbcL*)

批次编号 BI230328-2

```
>23RD33-3B_rbcL
AAGTGTGGCTTCAAAGCGGGCGTTAAAGATTACAAA
TTGACTTATTATACTCCTCAATATACACCCAAAGATA
CTGATACCCTGGCAGCATTCCGAGTAACTCCTCAACT
TGGAGTTCACCCGAAGAAGCGGGGGCTGCTGTAGCT
GCCGAATCTTCTACAGGTACATGGACAACCTGTGTGGA
CCGATGGACTTACCAGCCTTGATCGTTACAAAGGACG
ATGCTACGACATCGAGCCCGTTGCTGGAGAAGAAAAT
CAATATATTTGTATGTAGCCTATCCTTTAGACCTTTT
TGAAGAGGGTTCTGTACTAACATGTTTACTTCCATTG
TGGGTAATGTTTTGGGTTCAAAGCGCTACGCGCTCT
ACGTTTGGAGGATCTGCGAATTCCTGTTGCTTATGTTA
AACTTTCCAGGGGCGCCCATGGTATCCAAGTTGA
GAGAGATAAATTGAACAAGTATGGTCGTCCCCTATTG
GGATGTACTATTAACCAAAAATTGGGATTATCTGCTA
AGAACTACGGTAGAGCGGTTTATGAATGTCTC
```

参考资料

参照物料	中药材黄连标本
学名	<i>Coptis chinensis</i> Franch.
实验室编号	23RD33
样品标记	23RD33-3B
产地	中国重庆市石柱土家 族自治县
相对应之植物凭证 标本	23RD28
已鉴别	是
备注	ITS2: 166R; <i>psbA-trnH</i> : 111W

图像

正面图



背面图



参考DNA序列

中药材

DNA资料

核糖体 DNA 第二内部转录间隔区(ITS2)

批次编号 BI230328-2

```
>23RD33-4B ITS2
CGCACAGCGTCGCACCCCGCCACTCCTGCTGGACGGG
GAGCGGAGATTGGCCCCCGGGCACCCGYTGACCGG
CCGGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCT
ATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTTC
CGCCGCCACAGTRGGGACAGATCGACCCCGGACGC
CGTACCGACGGCGCTCACCTG
```

备注: 碱基位置 66, 160

叶绿体 *psbA-trnH* 基因间区(*psbA-trnH*)

批次编号 BI230328-2

```
>23RD33-4B_psbA-trnH
TCCACAAATGGCTAGGTCTTAGTGTACGCGAGTTTTA
GTGTATATGAGTTGTTGAAGTTGCAGGAGTAATACCA
AAATCTTGTTTGTAAAGAAATTTGGTATTACTCCWG
CATTTTTTTTTTTTTTAGTAAAAATAAGAAAATAGAA
TAGATCTTTGGAAAATCTTGATTATAATATGTTCTGT
ATTATTTCTTATAAAAATAATATTATATAATAACAAT
CTAAAATATGTTCTTAACTTTTTATTTTTATAAAGAT
AATATAAAGTAGAAGGGCGGA
```

备注: 碱基位置 111

叶绿体二磷酸核酮糖羧化酶大链(*rbcL*)

批次编号 BI230328-2

```
>23RD33-4B_rbcL
AAGTGTGGCTTCAAAGCGGGCGTTAAAGATTACAAA
TTGACTTATTATACTCCTCAATATACACCCAAAGATA
CTGATACCCTGGCAGCATTCCGAGTAACTCCTCAACC
TGGAGTTCACCCGAAGAAGCGGGGGCTGCTGTAGCT
GCCGAATCTTCTACAGGTACATGGACAATGTGTGGA
CCGATGGACTTACCAGCCTTGATCGTTACAAAGGACG
ATGCTACGACATCGAGCCCGTTGCTGGAGAAGAAAAT
CAATATATTTGTTATGTAGCCTATCCTTTAGACCTTTT
TGAAGAGGGTTCTGTACTAACATGTTTACTTCCATTG
TGGGTAATGTTTTGGGTTCAAAGCGCTACGCGCTCT
ACGTTTGGAGGATCTGCGAATTCCTGTTGCTTATGTTA
AAACTTTCCAGGGGCGCCCATGGTATCCAAGTTGA
GAGAGATAAATTGAACAAGTATGGTCGTCCCCTATTG
GGATGTACTATTAACCAAAATGGGATTATCTGCTA
AGAACTACGGTAGAGCGGTTTATGAATGTCTC
```

参考资料

参照物料	中药材黄连标本
学名	<i>Coptis chinensis</i> Franch.
实验室编号	23RD33
样品标记	23RD33-4B
产地	中国重庆市石柱土家 族自治县
相对应之植物凭证 标本	23RD28
已鉴别	是
备注	ITS2: 66Y, 160R; psbA-trnH: 111W

图像

正面图



背面图



参考DNA序列

中药材

DNA资料

核糖体 DNA 第二内部转录间隔区(ITS2)

批次编号 BI230328-2

```
>23RD33-5A ITS2
CGCACAGCGTCGCACCCCGCCACTCYTGCTGGACGGG
GAGCGGAGATTGGCCCCCGGGCACCCGYTGCACGG
YCGGCTCAAATGACTGTCCCCGGCGACGAGCGTCTGCT
ATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTCT
CGCCGCCACAGTAGGGACRGATCGACCCCGGACGC
CGTACCGACGGCGCTCACCTG
```

备注: 碱基位置 26, 66, 74, 166

叶绿体 *psbA-trnH* 基因间区(*psbA-trnH*)

批次编号 BI230328-2

```
>23RD33-5A_psbA-trnH
TCCACAAATGGCTAGGTCTTAGTGTACGCGAGTTTTA
GTGTATATGAGTTGTTGAAGTTGCAGGAGTAATACCA
AAATCTTGTGTTTGTAAAGAAATTTGGTATTACTCCWG
CATTTTTTTTTTTTTTAGTAAAAATAAGAAAATAGAA
TAGATCTTTGGAAAATTCTTGATTATAATATGTTCTGT
ATTATTTTCTTATAAAAATAATATTATATATAAACAAT
CTAAAATATGTTCTTAACTTTTTATTTTTATAAAGAT
AATATAAAGTAGAAGGGCGGA
```

备注: 碱基位置 111

叶绿体二磷酸核酮糖羧化酶大链(*rbcL*)

批次编号 BI230328-2

```
>23RD33-5A_rbcL
AAGTGTGGCTTCAAAGCGGGCGTTAAAGATTACAAA
TTGACTTATTATACTCCTCAATATACACCCAAAGATA
CTGATACCCTGGCAGCATTCCGAGTAACTCCTCAACC
TGGAGTTCACCCGAAGAAGCGGGGGCTGCTGTAGCT
GCCGAATCTTCTACAGGTACATGGACAACCTGTGTGGA
CCGATGGACTTACCAGCCTTGATCGTTACAAAGGACG
ATGCTACGACATCGAGCCCGTTGCTGGAGAAGAAAAT
CAATATATTTGTATGTAGCCTATCCTTTAGACCTTTT
TGAAGAGGGTTCTGTACTAACATGTTACTTCCATTG
TGGGTAATGTTTTGGGTTCAAAGCGCTACGCGCTCT
ACGTTTGGAGGATCTGCGAATTCCTGTTGCTTATGTTA
AAACTTTCCAGGGGCCGCCCATGGTATCCAAGTTGA
GAGAGATAAATTGAACAAGTATGGTCGTCCCCTATTG
GGATGTACTATTAACCAAAAATTGGGATTATCTGCTA
AGAACTACGGTAGAGCGGTTTATGAATGTCTC
```

参考资料

参照物料	中药材黄连标本
学名	<i>Coptis chinensis</i> Franch.
实验室编号	23RD33
样品标记	23RD33-5A
产地	中国重庆市石柱土家 族自治县
相对应之植物凭证 标本	23RD28
已鉴别	是
备注	ITS2: 26Y, 66Y, 74Y, 166R; <i>psbA-trnH</i> : 111W

图像

正面图



背面图



参考DNA序列

中药材

DNA资料

核糖体 DNA 第二内部转录间隔区(ITS2)

批次编号 BI230328-2

```
>23RD33-6A ITS2
CGCACAGCGTCGCACCCCGCCACTCCTGCTGGACGGG
GAGCGGAGATTGGCCCCCGGGCACCCGYTGCACGG
CCGGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCT
ATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTTCT
CGCCGCCACAGTAGGGACRGATCGACCCCGGACGC
CGTACCGACGGCGCTCACCTG
```

备注: 碱基位置 66, 166

叶绿体 *psbA-trnH* 基因间区(*psbA-trnH*)

批次编号 BI230328-2

```
>23RD33-6A_psbA-trnH
CAAATGGCTAGGTCTTAGTGTACGCGAGTTTTAGTGT
ATATGAGTTGTTGAAGTTGCAGGAGTAATACAAAAT
TCTTGTGTTGTTAAGAATTTGGTATTACTCCWGCATT
TTTTTTTTTTTTAGTAAAAATAAGAAAATAGAATAG
ATCTTTGGAAAATTCTTGATTATAATATGTTCTGTATT
ATTTTCTATAAAAATAATATTATATATAATACAATCTA
AATATGTTCTTAACACTTTTTATTTTTATAAAGATAAT
ATATAATATAAAGTAGAAGGGCGGA
```

备注: 碱基位置 107

叶绿体二磷酸核酮糖羧化酶大链(*rbcL*)

批次编号 BI230328-2

```
>23RD33-6A_rbcL
AAGTGTGGCTTCAAAGCGGGCGTTAAAGATTACAAA
TTGACTTATTATACTCCTCAATATACACCCAAAGATA
CTGATACCCTGGCAGCATTCCGAGTAACTCCTCAACC
TGGAGTTCACCCGGAAGAAGCGGGGGCTGCTGTAGCT
GCCGAATCTTCTACAGGTACATGGACAACCTGTGTGGA
CCGATGGACTTACCAGCCTTGATCGTTACAAAGGACG
ATGCTACGACATCGAGCCCGTTGCTGGAGAAGAAAAT
CAATATATTTGTATGTAGCCTATCCTTTAGACCTTTT
TGAAGAGGGTTCTGTACTAACATGTTTACTTCCATTG
TGGGTAATGTTTTGGGTTCAAAGCGCTACGCGCTCT
ACGTTTGGAGGATCTGCGAATTCCTGTTGCTTATGTTA
AAACTTTCCAGGGGCGCCCATGGTATCCAAGTTGA
GAGAGATAAATTGAACAAGTATGGTCGTCCCCTATTG
GGATGTACTATTAACCAAAAATTGGGATTATCTGCTA
AGAACTACGGTAGAGCGGTTTATGAATGTCTC
```

参考资料

参照物料	中药材黄连标本
学名	<i>Coptis chinensis</i> Franch.
实验室编号	23RD33
样品标记	23RD33-6A
产地	中国重庆市石柱土家族自治县
相对应之植物凭证标本	23RD28
已鉴别	是
备注	ITS2: 66Y, 166R; psbA-trnH: 107W

图像

正面图



背面图



参考DNA序列

中药材

DNA资料

核糖体 DNA 第二内部转录间隔区(ITS2)

批次编号 BI230815-1

```
>23RD131-4A ITS2
CGCACAGCGTCGCACCCCGCCACTCCTGCTGGACGGG
GAGCGGAGATTGGCCCCCGGGCACCCGYTGCACGG
CCGGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCT
ATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTTCT
CGCCGCCACAGTAGGGACRGATCGACCCCGGACGC
CGTACCGACGGCGCTCACCTG
```

备注: 碱基位置 66, 166

叶绿体 *psbA-trnH* 基因间区(*psbA-trnH*)

批次编号 BI230815-1

```
>23RD131-4A_psbA-trnH
CAAATGGCTAGGTCTTAGTGTACGCGAGTTTTAGTGT
ATATGAGTTGTTGAAGTTCAGGAGTAATACAAAAT
TCTTAACAAAACAAGAATTTGGTATTACTCCWGCAT
TTTTTTTTTTTTAGTAAAAATAAGAAAATAGAATAG
ATCTTTGGAAAATTCTTGATTATAATATGTTCTGTATT
ATTTTCTATAAAAATAATATTATATATAATACAATCTA
AATATGTTCTTAACACTTTTTATTTTATAAAGATAAT
ATAAAGTAGAAGGGCGGA
```

备注: 碱基位置 107

叶绿体二磷酸核酮糖羧化酶大链(*rbcL*)

批次编号 BI230815-1

```
>23RD131-4A_rbcL
AAGTGTGGCTTCAAAGCGGGCGTTAAAGATTACAAA
TTGACTTATTATACTCCTCAATATACACCCAAAGATA
CTGATACCCTGGCAGCATTCCGAGTAACTCCTCAACC
TGGAGTTCACCCGAAGAAGCGGGGGCTGCTGTAGCT
GCCGAATCTTACAGGTACATGGACAACCTGTGTGGA
CCGATGGACTTACCAGCCTTGATCGTTACAAAGGACG
ATGCTACGACATCGAGCCCGTTGCTGGAGAAGAAAAT
CAATATATTTGTATGTAGCCTATCCTTTAGACCTTTT
TGAAGAGGGTTCTGTACTAACATGTTACTTCCATTG
TGGGTAATGTTTTGGGTTCAAAGCGCTACGCGCTCT
ACGTTTGGAGGATCTGCGAATTCCTGTTGCTTATGTTA
AAACTTTCCAGGGGCGCCCATGGTATCCAAGTTGA
GAGAGATAAATTGAACAAGTATGGTCGTCCCCTATTG
GGATGTACTATTAACCAAAAATTGGGATTATCTGCTA
AGAACTACGGTAGAGCGGTTTATGAATGTCTC
```

参考资料

参照物料	中药材黄连标本
学名	<i>Coptis chinensis</i> Franch.
实验室编号	23RD131
样品标记	23RD131-4A
产地	中国四川省大邑县
相对应之植物凭证标本	23RD27
已鉴别	是
备注	ITS2: 66Y, 166R; psbA-trnH: 107W

图像

正面图



背面图



参考DNA序列

中药材

DNA资料

核糖体 DNA 第二内部转录间隔区(ITS2)

批次编号 BI230815-1

```
>23RD132-2B ITS2
CGCACAGCGTCGCACCCCGCCACTCCTGCTGGACGGG
GAGCGGAGATTGGCCCCCGGGCACCCGTTGCACGG
CCGGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCT
ATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTTCT
CGCCGCCACAGTAGGGACRGATCGACCCCGGACGC
CGTACCGACGGCGCTCACCTG
```

备注: 碱基位置 166

叶绿体 *psbA-trnH* 基因间区(*psbA-trnH*)

批次编号 BI230815-1

```
>23RD132-2B_psbA-trnH
CAAATGGCTAGGTCTTAGTGTACGCGAGTTTTAGTGT
ATATGAGTTGTTGAAGTTCAGGAGTAATACAAAAT
TCTTGTGTTGTTAAGAATTTGGTATTACTCCWGCATT
TTTTTTTTTTTTAGTAAAAATAAGAAAATAGAATAG
ATCTTTGGAAAATTCTTGATTATAATATGTTCTGTATT
ATTTTCTATAAAAATAATATTATATATAATACAATCTA
AATATGTTCTTAACACTTTTTATTTTTATAAAGATAAT
ATAAAGTAGAAGGGCGG
```

备注: 碱基位置 107

叶绿体二磷酸核酮糖羧化酶大链(*rbcL*)

批次编号 BI230815-1

```
>23RD132-2B_rbcL
AAGTGTGGCTTCAAAGCGGGCGTTAAAGATTACAAA
TTGACTTATTATACTCCTCAATATACACCCAAAGATA
CTGATACCCTGGCAGCATTCCGAGTAACTCCTCAACT
TGGAGTTCACCCGAAGAAGCGGGGGCTGCTGTAGCT
GCCGAATCTTCTACAGGTACATGGACAACCTGTGTGGA
CCGATGGACTTACCAGCCTTGATCGTTACAAAGGACG
ATGCTACGACATCGAGCCCGTTGCTGGAGAAGAAAAT
CAATATATTTGTATGTAGCCTATCCTTTAGACCTTTT
TGAAGAGGGTTCTGTACTAACATGTTACTTCCATTG
TGGGTAATGTTTTGGGTTCAAAGCGCTACGCGCTCT
ACGTTTGGAGGATCTGCGAATTCCTGTTGCTTATGTTA
AACTTTCCAGGGGCGCCCATGGTATCCAAGTTGA
GAGAGATAAATTGAACAAGTATGGTCGTCCCCTATTG
GGATGTACTATTAACCAAAAATTGGGATTATCTGCTA
AGAACTACGGTAGAGCGGTTTATGAATGTCTC
```

参考资料

参照物料	中药材黄连标本
学名	<i>Coptis chinensis</i> Franch.
实验室编号	23RD132
样品标记	23RD132-2B
产地	中国四川省大邑县
相对应之植物凭证标本	23RD29,23RD30
已鉴别	是
备注	ITS2: 166R; psbA-trnH: 107W

图像

正面图



背面图



参考DNA序列

中药材

DNA资料

核糖体 DNA 第二内部转录间隔区(ITS2)

批次编号 BI230815-1

```
>23RD132-3A ITS2
CGCACAGCGTCGCACCCCGCCACTCCTGCTGGACGGG
GAGCGGAGATTGGCCCCCGGGCACCCGYTGCACGG
CCGGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCT
ATCGTGGTGGATCAAAGCTGAGATAAGGCGTTCTCGC
CGCCACAGTAGGGACRGATCGACCCCGGACGCCGT
CACCGACGGCGCTCACCTG
```

备注: 碱基位置 66, 166

叶绿体 *psbA-trnH* 基因间区(*psbA-trnH*)

批次编号 BI230815-1

```
>23RD132-3A_psbA-trnH
CAAATGGCTAGGTCTTAGTGTACGCGAGTTTTAGTGT
ATATGAGTTGTTGAAGTTGCAGGAGTAATACAAAAT
TCTTGTGTTGTTAAGAATTTGGTATTACTCCWGCATT
TTTTTTTTTTTTAGTAAAAATAAGAAAATAGAATAG
ATCTTTGGAAAATTCTTGATTATAATATGTTCTGTATT
ATTTCTTATAAAAATAATATTATATATAATACAATCTA
AATATGTTCTTAACACTTTTTATTTTATAAAGATAAT
ATATAATATAAAG
```

备注: 碱基位置 107

叶绿体二磷酸核酮糖羧化酶大链(*rbcL*)

批次编号 BI230815-1

```
>23RD132-3A_rbcL
AAGTGTGGCTTCAAAGCGGGCGTTAAAGATTACAAA
TTGACTTATTATACTCCTCAATATACACCCAAAGATA
CTGATACCCTGGCAGCATTCCGAGTAACTCCTCAACC
TGGAGTTCACCCGAAGAAGCGGGGGCTGCTGTAGCT
GCCGAATCTTCTACAGGTACATGGACAACCTGTGTGGA
CCGATGGACTTACCAGCCTTGATCGTTACAAAGGACG
ATGCTACGACATCGAGCCCGTTGCTGGAGAAGAAAAT
CAATATATTTGTATGTAGCCTATCCTTTAGACCTTTT
TGAAGAGGGTTCTGTACTAACATGTTTACTTCCATTG
TGGGTAATGTTTTGGGTTCAAAGCGCTACGCGCTCT
ACGTTTGGAGGATCTGCGAATTCCTGTTGCTTATGTTA
AAACTTTCCAGGGGCGCCCATGGTATCCAAGTTGA
GAGAGATAAATTGAACAAGTATGGTCGTCCCCTATTG
GGATGACTATTAACCAAAAATTGGGATTATCTGCTA
AGAACTACGGTAGAGCGGTTTATGAATGTCTC
```

参考资料

参照物料	中药材黄连标本
学名	<i>Coptis chinensis</i> Franch.
实验室编号	23RD132
样品标记	23RD132-3A
产地	中国四川省大邑县
相对应之植物凭证标本	23RD29,23RD30
已鉴别	是
备注	ITS2: 66Y, 163R; psbA-trnH: 107W

图像

正面图



背面图



参考DNA序列

中药材

DNA资料

核糖体 DNA 第二内部转录间隔区(ITS2)

批次编号 BI230815-2

```
>23RD133-1B ITS2
CGCACAGCGTCGCACCCCGCCACTCCTGCTGGACGGG
GAGCGGAGATTGGCCCCCGGGCACCCGYTGACGG
CCGGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCT
ATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTTCT
CGCCGCCACAGTAGGGACRGATCGACCCCGGACGC
CGTCACCGACGGCGCTCACCTG
```

备注: 碱基位置 66, 166

叶绿体 *psbA-trnH* 基因间区(*psbA-trnH*)

批次编号 BI230815-2

```
>23RD133-1B_psbA-trnH
CAAATGGCTAGGTCTTAGTGTACGCGAGTTTTAGTGT
ATATGAGTTGTTGAAGTTCAGGAGTAATACAAAAT
TCTTAACAAAACAAGAAATTTGGTATTACTCCWGCAT
TTTTTTTTTTTTTAGTAAAAATAAGAAAATAGAATAG
ATCTTTGGAAAATTCTTGATTATAATATGTTCTGTATT
ATTTTCTATAAAAATAATATTATATATAAT
```

备注: 碱基位置 107

叶绿体二磷酸核酮糖羧化酶大链(*rbcL*)

批次编号 BI230815-2

```
>23RD133-1B_rbcL
AAGTGTGGCTTCAAAGCGGGCGTTAAAGATTACAAA
TTGACTTATTATACTCCTCAATATACCCAAAGATA
CTGATACCCTGGCAGCATTCCGAGTAACTCCTCAACC
TGGAGTTCCACCGAAGAAGCGGGGGCTGCTGTAGCT
GCCGAATCTTCTACAGGTACATGGACAACCTGTGTGGA
CCGATGGACTTACCAGCCTTGATCGTTACAAAGGACG
ATGCTACGACATCGAGCCCCTTGCTGGAGAAGAAAAT
CAATATATTTGTTATGTAGCCTATCCTTTAGACCTTT
TGAAGAGGGTCTGTTACTAACATGTTTACTTCCATTG
TGGGTAATGTTTTGGGTTCAAAGCGCTACGCGCTCT
ACGTTTGGAGGATCTGCGAATCCTGTTGCTTATGTTA
AACTTTCCAGGGGCCGCCCATGGTATCCAAGTTGA
GAGAGATAAATTGAACAAGTATGGTCGTCCTTATTG
GGATGTACTATTAAACCAAAAATTGGGATTATCTGCTA
AGAACTACGGTAGAGCGGTTTATGAATGTCTC
```

参考资料

参照物料	中药材黄连标本
学名	<i>Coptis chinensis</i> Franch.
实验室编号	23RD133
样品标记	23RD133-1B
产地	中国重庆市江津区
相对应之植物凭证标本	23RD31,23RD32
已鉴别	是
备注	ITS2: 66Y, 166R; psbA-trnH: 107W

图像

正面图



背面图



参考DNA序列

中药材

DNA资料

核糖体 DNA 第二内部转录间隔区(ITS2)

批次编号 BI230815-2

```
>23RD133-2B ITS2
CGCACAGCGTCGCACCCCGCCACTCCTGCTGGACGGG
GAGCGGAGATTGGCCCCCGGGCACCCGYTGACCGG
YCGGCTCAAATGACTGTCCCCGGCGACGAGCGTCTGCT
ATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTCTC
CGCCGCCACAGTAGGGACRGATCGACCCCGGACGC
CGTACCGACGGCGCTCACCTG
```

备注: 碱基位置 66, 74, 166

叶绿体 *psbA-trnH* 基因间区(*psbA-trnH*)

批次编号 BI230815-2

```
>23RD133-2B_psbA-trnH
TCCACAAATGGCTAGGTCTTAGTGTACGCGAGTTTAA
GTGTATATGAGTTGTTGAAGTTGCAGGAGTAATACCA
AAATCTTGTTTTGTTAAGAAATTTGGTATTACTCCTG
CMTTTTTTTTTTTTTTAGTAAAAATAAGAAAAATAGA
ATAGATCTTTGGAAAATCTTGATTATAATATGTTCTG
TATTATTTTCTTATAAAAATAATATTATATATAATACAA
TCTAAATATGTTCTTAACACTTTTTATTTTTATAAAGA
TAATATAAAGTAGAAG
```

备注: 碱基位置 114

叶绿体二磷酸核酮糖羧化酶大链(*rbcL*)

批次编号 BI230815-2

```
>23RD133-2B_rbcL
AAGTGTGGCTTCAAAGCGGGCGTTAAAGATTACAAA
TTGACTTATTATACTCCTCAATATACACCCAAAGATA
CTGATACCCTGGCAGCATTCCGAGTAACTCCTCAACT
TGGAGTTCACCCGAAGAAGCGGGGGCTGCTGTAGCT
GCCGAATCTTCTACAGGTACATGGACAACCTGTGTGGA
CCGATGGACTTACCAGCCTTGATCGTTACAAAGGACG
ATGCTACGACATCGAGCCCGTTGCTGGAGAAGAAAAT
CAATATATTTGTATGTAGCCTATCCTTTAGACCTTTT
TGAAGAGGGTCTGTACTAACATGTTTACTTCCATTG
TGGGTAATGTTTTGGGTTCAAAGCGCTACGCGCTCT
ACGTTTGGAGGATCTGCGAATTCCTGTTGCTTATGTTA
AAACTTTCCAGGGGCGCCCATGGTATCCAAGTTGA
GAGAGATAAATTGAACAAGTATGGTCGTCCCCTATTG
GGATGTACTATTAACCAAAATTGGGATTATCTGCTA
AGAACTACGGTAGAGCGGTTTATGAATGTCTC
```

参考资料

参照物料	中药材黄连标本
学名	<i>Coptis chinensis</i> Franch.
实验室编号	23RD133
样品标记	23RD133-2B
产地	中国重庆市江津区
相对应之植物凭证标本	23RD31,23RD32
已鉴别	是
备注	ITS2: 66Y, 74Y, 166R; <i>psbA-trnH</i> : 114M

图像

正面图



背面图



参考DNA序列

中药材

DNA资料

核糖体 DNA 第二内部转录间隔区(ITS2)

批次编号 BI230815-2

```
>23RD133-3A ITS2
CGCACAGCGTCGCACCCCGCCACTCYTGCTGGACGGG
GAGCGGAGATTGGCCCCCGGGCACCCGYTGACCGG
CCGGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCT
ATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTTCT
CGCCGCCACAGTAGGGACRGATCGACCCCGGACGC
CGTACCGACGGCGCTCACCTG
```

备注: 碱基位置 26, 66, 166

叶绿体 *psbA-trnH* 基因间区(*psbA-trnH*)

批次编号 BI230815-2

```
>23RD133-3A_psbA-trnH
TGGCTAGGTCTTAGTGACGCGAGTTTTAGTGTATAT
GAGTTGTTGAAGTTGCAGGAGTAATACAAAATTCTT
GTTTTGTTAAGAATTTTGGTATTACTCCWGCATTTTT
TTTTTTTTAGTAAAAATAAGAAAATAGAATAGATCT
TTGAAAATTCTTGATTATAATATGTTCTGTATTATT
TCTTATAAAAATAATATTATATATAATA
```

备注: 碱基位置 103

叶绿体二磷酸核酮糖羧化酶大链(*rbcL*)

批次编号 BI230815-2

```
>23RD133-3A_rbcL
AAGTGTGGCTTCAAAGCGGGCGTTAAAGATTACAAA
TTGACTTATTATACTCCTCAATATAACCCAAAGATA
CTGATACCCTGGCAGCATTCCGAGTAACTCCTCAACC
TGGAGTTCCACCGAAGAAGCGGGGGCTGCTGTAGCT
GCCGAATCTTCTACAGGTACATGGACAACCTGTGTGGA
CCGATGGACTTACCAGCCTTGATCGTTACAAAGGACG
ATGCTACGACATCGAGCCCGTTGCTGGAGAAGAAAAT
CAATATATTTGTTATGTAGCCTATCCTTTAGACTTTT
TGAAGAGGGTCTGTTACTAACATGTTTACTTCCATTG
TGGGTAATGTTTTGGGTTCAAAGCGCTACGCGCTCT
ACGTTTGGAGGATCTGCGAATCCTGTTGCTTATGTTA
AACTTTCCAGGGGCCGCCCATGGTATCCAAGTTGA
GAGAGATAAATTGAACAAGTATGGTCGTCCTTATTG
GGATGTACTATTAAACCAAATGGGATTATCTGCTA
AGAACTACGGTAGAGCGGTTTATGAATGTCTC
```

参考资料

参照物料	中药材黄连标本
学名	<i>Coptis chinensis</i> Franch.
实验室编号	23RD133
样品标记	23RD133-3A
产地	中国重庆市江津区
相对应之植物凭证标本	23RD31,23RD32
已鉴别	是
备注	ITS2: 26Y, 66Y, 166R; <i>psbA-trnH</i> : 103W

图像

正面图



背面图



参考DNA序列

中药材

DNA资料

核糖体 DNA 第二内部转录间隔区(ITS2)

批次编号 BI230815-2

>23RD133-4A ITS2

```
CGCACAGCGTCGCACCCCGCCACTCTTGCTGGACGGG
GAGCGGAGATTGGCCCCCGGGCACCCGCTGCACGG
TCGGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCT
ATTATCGTGGTGATCAAAGCTGAGATAAGGCGTTCT
CGCCGCCACAGTAGGGACAGATCGACCCCGGACGC
CGTCACCGACGGCGCTCACCTG
```

叶绿体 *psbA-trnH* 基因间区(*psbA-trnH*)

批次编号 BI230815-2

>23RD133-4A *psbA-trnH*

```
CAAATGGCTAGGTCTTAGTGTACGCGAGTTTTAGTGT
ATATGAGTTGTTGAAGTTGCAGGAGTAATACAAAAT
TCTTAACAAAACAAGAATTTTGGTATTACTCCWGCAT
TTTTTTTTTTTTAGTAAAAATAAGAAAATAGAATAG
ATCTTTGGAAAATCTTGATTATAATATGTCTGTATT
ATTTTCTATAAAAATAATATTATATATAATACAATCTA
AATATGTTCTTAACACTTTTTATTTTTATAAAGATAAT
ATAAAG
```

备注: 碱基位置 107

叶绿体二磷酸核酮糖羧化酶大链(*rbcL*)

批次编号 BI230815-2

>23RD133-4A *rbcL*

```
AAGTGTGGCTTCAAAGCGGGCGTTAAAGATTACAAA
TTGACTTATTATACTCCTCAATATACCCAAAGATA
CTGATACCCTGGCAGCATTCCGAGTAACTCCTCAACC
TGGAGTTCCACCGAAGAAGCGGGGGCTGCTGTAGCT
GCCGAATCTTCTACAGGTACATGGACAACCTGTGTGGA
CCGATGGACTTACCAGCCTTGATCGTTACAAAGGACG
ATGCTACGACATCGAGCCCGTTGCTGGAGAAGAAAAT
CAATATATTTGTTATGTAGCCTATCCTTTAGACCTTT
TGAAGAGGGTCTGTTACTAACATGTTTACTTCCATTG
TGGGTAATGTTTTGGGTTCAAAGCGCTACGCGCTCT
ACGTTTGGAGGATCTGCGAATCCTGTTGCTTATGTTA
AACTTTCCAGGGGCCGCCCATGGTATCCAAGTTGA
GAGAGATAAATTGAACAAGTATGGTCGTCCTTATTG
GGATGTACTATTAAACCAAAAATTGGGATTATCTGCTA
AGAACTACGGTAGAGCGGTTTATGAATGTCTC
```

参考资料

参照物料	中药材黄连标本
学名	<i>Coptis chinensis</i> Franch.
实验室编号	23RD133
样品标记	23RD133-4A
产地	中国重庆市江津区
相对应之植物凭证标本	23RD31,23RD32
已鉴别	是
备注	<i>psbA-trnH</i> : 107W

图像

正面图



背面图



参考DNA序列

中药材

DNA资料

核糖体 DNA 第二内部转录间隔区(ITS2)

批次编号 BI230815-2

```
>23RD133-6A ITS2
CGCACAGCGTCGCACCCCGCCACTCCTGCTGGACGGG
GAGCGGAGATTGGCCCCCGGGCACCCGYTGCACGG
CCGGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCT
ATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTTC
CGCCGCCACAGTAGGGACRGATCGACCCCGGACGC
CGTACCGACGGCGCTCACCTG
```

备注: 碱基位置 66, 166

叶绿体 *psbA-trnH* 基因间区(*psbA-trnH*)

批次编号 BI230815-2

```
>23RD133-6A_psbA-trnH
CAAATGGCTAGGTCTTAGTGTACGCGAGTTTTAGTGT
ATATGAGTTGTTGAAGTTCAGGAGTAATACAAAAT
TCTTGTGTTGTTAAGAATTTGGTATTACTCCWGCATT
TTTTTTTTTTTTAGTAAAAATAAGAAAATAGAATAG
ATCTTTGGAAAATTCTTGATTATAATATGTCTGTATT
ATTTTCTATAAAAATAATATTATATATAATAACAATCTA
AATATGTTCTTAACACTTTTTATTTTATAAAGATAAT
ATATAATATAAAG
```

备注: 碱基位置 107

叶绿体二磷酸核酮糖羧化酶大链(*rbcL*)

批次编号 BI230815-2

```
>23RD133-6A_rbcL
AAGTGTGGCTTCAAAGCGGGCGTTAAAGATTACAAA
TTGACTTATTATACTCCTCAATATACACCCAAAGATA
CTGATACCCTGGCAGCATTCCGAGTAACTCCTCAACC
TGGAGTTCACCCGAAGAAGCGGGGGCTGCTGTAGCT
GCCGAATCTTCTACAGGTACATGGACAACCTGTGTGA
CCGATGGACTTACCAGCCTTGATCGTTACAAAGGACG
ATGCTACGACATCGAGCCCGTTGCTGGAGAAGAAAAT
MAATATATTTGTTATGTAGCCTATCCTTTAGACCTTTT
TGAAGAGGGTCTGTACTAACATGTTTACTTCCATTG
TGGGTAATGTTTTGGGTTCAAAGCGCTACGCGCTCT
ACGTTTGGAGGATCTGCGAATTCCCKGTTGCTTATGTT
AAAACCTTCCAGGGGCCGCCCATGGTATCCAAGTTG
AGAGAGATAAATTGAACAAGTATGGTCGTCCCTATT
GGGATGTACTATTAACCAAAAATTGGGATTATCTGCT
AAGAACTACGGTAGAGCGGTTTATGAATGTCTC
```

备注: 碱基位置 260, 397

参考资料

参照物料	中药材黄连标本
学名	<i>Coptis chinensis</i> Franch.
实验室编号	23RD133
样品标记	23RD133-6A
产地	中国重庆市江津区
相对应之植物凭证标本	23RD31,23RD32
已鉴别	是
备注	ITS2: 66Y, 166R; psbA-trnH: 107W; rbcL: 260M, 397K

图像

正面图



背面图



FASTA格式之参考DNA序列

*Coptis chinensis*植物凭证标本及中药材黄连标本的核糖体DNA第二内部转录间隔区(ITS2)序列

```

>23RD27-1B ITS2
CGCACAGCGTCGCACCCCGCCACTCCTGCTGGACGGGGAGCGGAGATTGCCCCCGGGCACCCGYTGACGGCC
GGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCTATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTTCTCGCC
GCCACAGTAGGGACRGATCGACCCCGGACGCCGTCACCGACGGCGCTCACCTG
>23RD28-1B ITS2
CGCACAGCGTCGCACCCCGCCACTCCTGCTGGACGGGGAGCGGAGATTGCCCCCGGGCACCCGCTGCACGGCC
GGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCTATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTTCTCGCC
GCCACAGTAGGGACRGATCGACCCCGGACGCCGTCACCGACGGCGCTCACCTG
>23RD29-1B ITS2
CGCACAGCGTCGCACCCCGCCACTCCTGCTGGACGGGGAGCGGAGATTGCCCCCGGGCACCCGYTGACGGCC
GGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCTATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTTCTCGCC
GCCACAGTAGGGACRGATCGACCCCGGACGCCGTCACCGACGGCGCTCACCTG
>23RD30-1A ITS2
CGCACAGCGTCGCACCCCGCCACTCCTGCTGGACGGGGAGCGGAGATTGCCCCCGGGCACCCGCTGCACGGCC
GGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCTATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTTCTCGCC
GCCACAGTAGGGACAGATCGACCCCGGACGCCGTCACCGACGGCGCTCACCTG
>23RD31-1B ITS2
CGCACAGCGTCGCACCCCGCCACTCYTGTGGACGGGGAGCGGAGATTGCCCCCGGGCACCCGCTGCACGGCC
GGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCTATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTTCTCGCC
GCCACAGTAGGGACAGATCGACCCCGGACGCCGTCACCGACGGCGCTCACCTG
>23RD32-1B ITS2
CGCACAGCGTCGCACCCCGCCACTCYTGTGGACGGGGAGCGGAGATTGCCCCCGGGCACCCGCTGCACGGCC
GGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCTATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTTCTCGCC
GCCACAGTAGGGACAGATCGACCCCGGACGCCGTCACCGACGGCGCTCACCTG
>23RD33-1B ITS2
CGCACAGCGTCGCACCCCGCCACTCCTGCTGGACGGGGAGCGGAGATTGCCCCCGGGCACCCGYTGACGGCC
GGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCTATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTTCTCGCC
GCCACAGTAGGGACAGATCGACCCCGGACGCCGTCACCGACGGCGCTCACCTG
>23RD33-2B ITS2
CGCACAGCGTCGCACCCCGCCACTCCTGCTGGACGGGGAGCGGAGATTGCCCCCGGGCACCCGYTGACGGCC
GGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCTATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTTCTCGCC
GCCACAGTAGGGACRGATCGACCCCGGACGCCGTCACCGACGGCGCTCACCTG
>23RD33-3B ITS2
CGCACAGCGTCGCACCCCGCCACTCCTGCTGGACGGGGAGCGGAGATTGCCCCCGGGCACCCGTTGCACGGCC
GGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCTATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTTCTCGCC
GCCACAGTAGGGACRGATCGACCCCGGACGCCGTCACCGACGGCGCTCACCTG
>23RD33-4B ITS2
CGCACAGCGTCGCACCCCGCCACTCCTGCTGGACGGGGAGCGGAGATTGCCCCCGGGCACCCGYTGACGGCC
GGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCTATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTTCTCGCC
GCCACAGTRGGGACAGATCGACCCCGGACGCCGTCACCGACGGCGCTCACCTG
>23RD33-5A ITS2
CGCACAGCGTCGCACCCCGCCACTCYTGTGGACGGGGAGCGGAGATTGCCCCCGGGCACCCGYTGACGGYC
GGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCTATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTTCTCGCC
GCCACAGTAGGGACRGATCGACCCCGGACGCCGTCACCGACGGCGCTCACCTG
>23RD33-6A ITS2
CGCACAGCGTCGCACCCCGCCACTCCTGCTGGACGGGGAGCGGAGATTGCCCCCGGGCACCCGYTGACGGCC
GGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCTATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTTCTCGCC
GCCACAGTAGGGACRGATCGACCCCGGACGCCGTCACCGACGGCGCTCACCTG
>23RD131-4A ITS2
CGCACAGCGTCGCACCCCGCCACTCCTGCTGGACGGGGAGCGGAGATTGCCCCCGGGCACCCGYTGACGGCC
GGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCTATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTTCTCGCC
GCCACAGTAGGGACRGATCGACCCCGGACGCCGTCACCGACGGCGCTCACCTG
>23RD132-2B ITS2
CGCACAGCGTCGCACCCCGCCACTCCTGCTGGACGGGGAGCGGAGATTGCCCCCGGGCACCCGTTGCACGGCC
GGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCTATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTTCTCGCC
GCCACAGTAGGGACRGATCGACCCCGGACGCCGTCACCGACGGCGCTCACCTG
>23RD132-3A ITS2
CGCACAGCGTCGCACCCCGCCACTCCTGCTGGACGGGGAGCGGAGATTGCCCCCGGGCACCCGYTGACGGCC
GGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCTATTATCGTGGTGGATCAAAGCTGAGATAAGGCGTTCTCGCC
CACAGTAGGGACRGATCGACCCCGGACGCCGTCACCGACGGCGCTCACCTG
>23RD133-1B ITS2

```


CGCACAGCGTCGCACCCCGCCACTCCTGCTGGACGGGGAGCGGAGATTGGCCCCCGGGCACCCGYTGCACGGCC
GGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCTATTATCGTGGTGGATCAAAGCTGAGATAAGGGCGTTCTCGCC
GCCACAGTAGGGACRGATCGACCCCGGACGCCGTCACCGACGGCGCTCACCTG

>23RD133-2B_ITS2

CGCACAGCGTCGCACCCCGCCACTCCTGCTGGACGGGGAGCGGAGATTGGCCCCCGGGCACCCGYTGCACGGYC
GGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCTATTATCGTGGTGGATCAAAGCTGAGATAAGGGCGTTCTCGCC
GCCACAGTAGGGACRGATCGACCCCGGACGCCGTCACCGACGGCGCTCACCTG

>23RD133-3A_ITS2

CGCACAGCGTCGCACCCCGCCACTCYTGCTGGACGGGGAGCGGAGATTGGCCCCCGGGCACCCGYTGCACGGCC
GGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCTATTATCGTGGTGGATCAAAGCTGAGATAAGGGCGTTCTCGCC
GCCACAGTAGGGACRGATCGACCCCGGACGCCGTCACCGACGGCGCTCACCTG

>23RD133-4A_ITS2

CGCACAGCGTCGCACCCCGCCACTCTTGCTGGACGGGGAGCGGAGATTGGCCCCCGGGCACCCGCTGCACGGTC
GGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCTATTATCGTGGTGGATCAAAGCTGAGATAAGGGCGTTCTCGCC
GCCACAGTAGGGACAGATCGACCCCGGACGCCGTCACCGACGGCGCTCACCTG

>23RD133-6A_ITS2

CGCACAGCGTCGCACCCCGCCACTCCTGCTGGACGGGGAGCGGAGATTGGCCCCCGGGCACCCGYTGCACGGCC
GGCTCAAATGACTGTCCCCGGCGACGAGCGTCGCTATTATCGTGGTGGATCAAAGCTGAGATAAGGGCGTTCTCGCC
GCCACAGTAGGGACRGATCGACCCCGGACGCCGTCACCGACGGCGCTCACCTG

*Coptis chinensis*植物凭证标本及中药材黄连标本的叶绿体*psbA-trnH*基因间区(*psbA-trnH*)序列

>23RD27-1B_psbA-trnH

TCCACAAATGGCTAGGTCTTAGTGTACGCGAGTTTTAGTGTATATGAGTTGTTGAAGTTGCAGGAGTAATACCAAA
 ATCTTGTTTTGTTAAGAATTTTGGTATTACTCCWGCATTTTTTTTTTTTTTTAGTAAAAATAAGAAAATAGAATAG
 ATCTTTGGAAAATCTTGATTATAATATGTTCTGTATTATTTCTTATAAAAATAATATTATATAATACAATCTAA
 ATATGTTCTTAACACTTTTTATTTTTATAAAAGATAATATATAATATAAAGTAGAAGGGCGGA

>23RD28-1B_psbA-trnH

TCCACAAATGGCTAGGTCTTAGTGTACGCGAGTTTTAGTGTATATGAGTTGTTGAAGTTGCAGGAGTAATACCAAA
 ATCTTAACAAAACAAGAATTTTGGTATTACTCCWGCATTTTTTTTTTTTTTTAGTAAAAATAAGAAAATAGAATA
 GATCTTTGGAAAATCTTGATTATAATATGTTCTGTATTATTTCTTATAAAAATAATATTATATAATACAATCTA
 AATATGTTYTTAACACTTTTTATTTTTATAAAAGATAATATAAAGTAGAAGGG

>23RD29-1B_psbA-trnH

TCCACAAATGGCTAGGTCTTAGTGTACGCGAGTTTTAGTGTATATGAGTTGTTGAAGTTGCAGGAGTAATACCAAA
 ATCTTGTTTTGTTAAGAATTTTGGTATTACTCCWGCATTTTTTTTTTTTTTTAGTAAAAATAAGAAAATAGAATAG
 ATCTTTGGAAAATCTTGATTATAATATGTTCTGTATTATTTCTTATAAAAATAATATTATATAATACAATCTAA
 ATATGTTCTTAACACTTTTTATTTTTATAAAAGATAATATAAAGTAGAAG

>23RD30-1A_psbA-trnH

TCCACAAATGGCTAGGTCTTAGTGTACGCGAGTTTTAGTGTATATGAGTTGTTGAAGTTGCAGGAGTAATACCAAA
 ATCTTGTTTTGTTAAGAATTTTGGTATTACTCCWGCATTTTTTTTTTTTTTTAGTAAAAATAAGAAAATAGAATAG
 ATCTTTGGAAAATCTTGATTATAATATGTTCTGTATTATTTCTTATAAAAATAATATTATATAATACAATCTAA
 ATATGTTYTTAACACTTTTTATTTTTATAAAAGATAATATAAAGTAGAAG

>23RD31-1B_psbA-trnH

TCCACAAATGGCTAGGTCTTAGTGTACGCGAGTTTTAGTGTATATGAGTTGTTGAAGTTGCAGGAGTAATACCAAA
 ATCTTGTTTTGTTAAGAATTTTGGTATTACTCCTGCATTTTTTTTTTTTTTTAGTAAAAATAAGAAAATAGAATAGA
 TCTTTGGAAAATCTTGATTATAATATGTTCTGTATTATTTCTTATAAAAATAATATTATATAATACAATCTAAAT
 ATGTTCTTAACACTTTTTATTTTTATAAAAGATAATATAATATAAAG

>23RD32-1B_psbA-trnH

CAAATGGCTAGGTCTTAGTGTACGCGAGTTTTAGTGTATATGAGTTGTTGAAGTTGCAGGAGTAATACCAAAATTC
 TTGTTTTGTTAAGAATTTTGGTATTACTCCWGCATTTTTTTTTTTTTTTAGTAAAAATAAGAAAATAGAATAGATCT
 TTGGAAAATCTTGATTATAATATGTTCTGTATTATTTCTTATAAAAATAATATTATATAATACAATCTAAATAT
 GTTCTTAACACTTTTTATTTTTATAAAAGATAATATAAAGTAGAAGGGCGGA

>23RD33-1B_psbA-trnH

TCCACAAATGGCTAGGTCTTAGTGTACGCGAGTTTTAGTGTATATGAGTTGTTGAAGTTGCAGGAGTAATACCAAA
 ATCTTAACAAAACAAGAATTTTGGTATTACTCCWGCATTTTTTTTTTTTTTTAGTAAAAATAAGAAAATAGAATA
 GATCTTTGGAAAATCTTGATTATAATATGTTCTGTATTATTTCTTATAAAAATAATATTATATAATACAATCTA
 AATATGTTYTTAACACTTTTTATTTTTATAAAAGATAATATAAAGTAGAAGGGCGGA

>23RD33-2B_psbA-trnH

TCCACAAATGGCTAGGTCTTAGTGTACGCGAGTTTTAGTGTATATGAGTTGTTGAAGTTGCAGGAGTAATACCAAA
 ATCTTAACAAAACAAGAATTTTGGTATTACTCCWGCATTTTTTTTTTTTTTTAGTAAAAATAAGAAAATAGAATAG
 ATCTTTGGAAAATCTTGATTATAATATGTTCTGTATTATTTCTTATAAAAATAATATTATATAATACAATCTAA
 ATATGTTYTTAACACTTTTTATTTTTATAAAAGATAATATAAAGTAGAAG

>23RD33-3B_psbA-trnH

TCCACAAATGGCTAGGTCTTAGTGTACGCGAGTTTTAGTGTATATGAGTTGTTGAAGTTGCAGGAGTAATACCAAA
 ATCTTGTTTTGTTAAGAATTTTGGTATTACTCCWGCATTTTTTTTTTTTTTTAGTAAAAATAAGAAAATAGAATAG
 ATCTTTGGAAAATCTTGATTATAATATGTTCTGTATTATTTCTTATAAAAATAATATTATATAATACAATCTAA
 ATATGTTCTTAACACTTTTTATTTTTATAAAAGATAATATAAAGTAGAAGGGCGG

>23RD33-4B_psbA-trnH

TCCACAAATGGCTAGGTCTTAGTGTACGCGAGTTTTAGTGTATATGAGTTGTTGAAGTTGCAGGAGTAATACCAAA
 ATCTTGTTTTGTTAAGAATTTTGGTATTACTCCWGCATTTTTTTTTTTTTTTAGTAAAAATAAGAAAATAGAATAG
 ATCTTTGGAAAATCTTGATTATAATATGTTCTGTATTATTTCTTATAAAAATAATATTATATAATACAATCTAA
 ATATGTTCTTAACACTTTTTATTTTTATAAAAGATAATATAAAGTAGAAGGGCGGA

>23RD33-5A_psbA-trnH

TCCACAAATGGCTAGGTCTTAGTGTACGCGAGTTTTAGTGTATATGAGTTGTTGAAGTTGCAGGAGTAATACCAAA
 ATCTTGTTTTGTTAAGAATTTTGGTATTACTCCWGCATTTTTTTTTTTTTTTAGTAAAAATAAGAAAATAGAATAG
 ATCTTTGGAAAATCTTGATTATAATATGTTCTGTATTATTTCTTATAAAAATAATATTATATAATACAATCTAA
 ATATGTTCTTAACACTTTTTATTTTTATAAAAGATAATATAAAGTAGAAGGGCGGA

>23RD33-6A_psbA-trnH

CAAATGGCTAGGTCTTAGTGTACGCGAGTTTTAGTGTATATGAGTTGTTGAAGTTGCAGGAGTAATACCAAAATTC
 TTGTTTTGTTAAGAATTTTGGTATTACTCCWGCATTTTTTTTTTTTTTTAGTAAAAATAAGAAAATAGAATAGATCT
 TTGGAAAATCTTGATTATAATATGTTCTGTATTATTTCTTATAAAAATAATATTATATAATACAATCTAAATAT
 GTTCTTAACACTTTTTATTTTTATAAAAGATAATATAAAGTAGAAGGGCGGA

>23RD131-4A_psbA-trnH

CAAATGGCTAGGTCTTAGTGTACGCGAGTTTTAGTGTATATGAGTTGTTGAAGTTGCAGGAGTAATACCAAAATTC
 TTAACAAAACAAGAATTTTGGTATTACTCCWGCATTTTTTTTTTTTTTTAGTAAAAATAAGAAAATAGAATAGATCT
 TTGGAAAATCTTGATTATAATATGTTCTGTATTATTTCTTATAAAAATAATATTATATAATACAATCTAAATAT
 GTTCTTAACACTTTTTATTTTTATAAAAGATAATATAAAGTAGAAGGGCGGA

>23RD132-2B_psbA-trnH

CAAATGGCTAGGTCTTAGTGTACGCGAGTTTTAGTGTATATGAGTTGTTGAAGTTGCAGGAGTAATACCAAAATTC
TTGTTTTGTTAAGAATTTTGGTATTACTCCWGCATTTTTTTTTTTTTTTAGTAAAAATAAGAAAATAGAATAGATCT
TTGGAAAATCTTGATTATAATATGTTCTGTATTATTTTCTTATAAAAATAATATTATATATAATACAATCTAAATAT
GTTCTTAACACTTTTTATTTTATAAAGATAATATAAAGTAGAAGGGCGG

>23RD132-3A_psbA-tmH

CAAATGGCTAGGTCTTAGTGTACGCGAGTTTTAGTGTATATGAGTTGTTGAAGTTGCAGGAGTAATACCAAAATTC
TTGTTTTGTTAAGAATTTTGGTATTACTCCWGCATTTTTTTTTTTTTTTAGTAAAAATAAGAAAATAGAATAGATCT
TTGGAAAATCTTGATTATAATATGTTCTGTATTATTTTCTTATAAAAATAATATTATATATAATACAATCTAAATAT
GTTCTTAACACTTTTTATTTTATAAAGATAATATAATATAAAG

>23RD133-1B_psbA-tmH

CAAATGGCTAGGTCTTAGTGTACGCGAGTTTTAGTGTATATGAGTTGTTGAAGTTGCAGGAGTAATACCAAAATTC
TTAACAAAACAAGAATTTTGGTATTACTCCWGCATTTTTTTTTTTTTTTAGTAAAAATAAGAAAATAGAATAGATC
TTTGGAAAATCTTGATTATAATATGTTCTGTATTATTTTCTTATAAAAATAATATTATATATAAT

>23RD133-2B_psbA-tmH

TCCACAAAATGGCTAGGTCTTAGTGTACGCGAGTTTTAGTGTATATGAGTTGTTGAAGTTGCAGGAGTAATACCAAA
ATTCTTGTTTTGTTAAGAATTTTGGTATTACTCCTGCMTTTTTTTTTTTTTTAGTAAAAATAAGAAAATAGAATAG
ATCTTTGGAAAATCTTGATTATAATATGTTCTGTATTATTTTCTTATAAAAATAATATTATATATAATACAATCTAA
ATATGTTCTTAACACTTTTTATTTTATAAAGATAATATAAAGTAGAAG

>23RD133-3A_psbA-tmH

TGGCTAGGTCTTAGTGTACGCGAGTTTTAGTGTATATGAGTTGTTGAAGTTGCAGGAGTAATACCAAAATTCCTGT
TTTGTTAAGAATTTTGGTATTACTCCWGCATTTTTTTTTTTTTTTAGTAAAAATAAGAAAATAGAATAGATCTTTGG
AAAATCTTGATTATAATATGTTCTGTATTATTTTCTTATAAAAATAATATTATATATAATA

>23RD133-4A_psbA-tmH

CAAATGGCTAGGTCTTAGTGTACGCGAGTTTTAGTGTATATGAGTTGTTGAAGTTGCAGGAGTAATACCAAAATTC
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>23RD133-6A_psbA-tmH

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GTTCTTAACACTTTTTATTTTATAAAGATAATATAAAG

*Coptis chinensis*植物凭证标本及中药材黄连标本的叶绿体二磷酸核酮糖羧化酶大链(*rbcL*)部分序列

>23RD27-1B_ *rbcL*

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>23RD28-1B_ *rbcL*

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>23RD29-1B_ *rbcL*

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>23RD30-1A_ *rbcL*

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>23RD31-1B_ *rbcL*

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>23RD32-1B_ *rbcL*

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>23RD33-1B_ *rbcL*

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>23RD33-2B_ *rbcL*

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>23RD133-4A_rbcL

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