

## Supplementary data

Sequence of the original promoter of *rhIA* ( $P_{rhIA}$ ) and its RBS located at 3893009-3893431 bp of NC\_002516.2, GenBank.

```
CGCCAGAGCGTTTCGACACCGGAAACCGGGCCTGGCGCCCGGTTTTTTCATGCCTTTT
CCGCCAACCCCTCGCTGTTCCCCGCCGGCCGCTCTGGCACGCCTTATCGCGGGCGGGC
AGGGGCTTATGCGCAGGCGGCCGCCCGTCCTGTGAAATCTGGCAGTTACCGTTAGCTT
TCGAATTGGCTAAAAAGTGTTTCATCGGCTACGCGTGAACACGGACGCCAATCGTTTGC
GCAGGCCGATCTGCAAGACCCACACAAGCCCCTCGCCTGAAGGGGTACGCATCCGCC
GTGGCTGGTCCGCGCGGATGGCCGCTGAGTTACTTGTCTGCCGTTTGAACAATAAGAA
CGAACTCTACGTAATGCCGGGATACCCGTGGCAGCGATAGCTGTTTGCCTGTTTCAAAA
TTTTTGGGAGGTGTGAA
```

ORF of *irrE01*:

```
MPSANVSPPCPSGVRGGGMGPKAKAEASKPHPQIPVKLPFVTAPDALAAKARMRDAA
AYVAALPGRDTHSLMAGVPGVDLKFMPPLGWRDGAFDPEHNVILINSAARPERQRFTLAH
EIGHAILLGDDDLSDIHDAYEGERLEQVIETLCNVAAAAAILMPEPVIAEMLERFGPTGRAL
AELAKRAEVSASSALYALTEQTPVPVIYAVCAPGKPPREQAASDEDAGPSTEKVLTVRASS
STRGVKYTLASGTPVPADHPAALALATGMEVREESYVPFRSGRKMKAEVDAVPSRGIVAV
SFEFDPARLGRKDSEQADRDEPQDAAQ
```

ORF of *irrE02*:

```
MRELAAAYAARVPSLDAHGLMDGLDGVQLRFMPMGQRDGAYDPEHHVILINSQVRPER
QRFTLAHEISHALLLGDDDLSDLHDSFEGERLEQVIETLCNVGAAALLMPDALIAELLER
FGATGRALAEISRRADVSAALYALAERTPGAVLYAVCTRSRLETETDDEDGGAASGTAL
TVRVSGGSAGMKYTLRPGTPIADHPVQAAFESNLPLTGPSYVPFRSGRKMMPAEVDAFPVR
GRVMVSFDLNGRGGT
```

ORF of *irrE03*:

```
MTDPAPPPTALAAKARMRELAASYGAGLPGRDTHSLMHGLDGITLTFMPMGQRDGAY
DPEHHVILINSQVRPERQRFTLAHEISHALLLGDDDLSDLHDEYEGDRLEQVIETLCNVG
AAALLMPAELIDDLTRFGPTGRALAEARRADVSAALYALAERTAPPVIYAVCALSRQ
EDEGEGGGAKELTVRASSASAGVKYSLSAGTPVPDDHPAALALDTRLPLAQDSYVPFRSG
RRMPAYVDAFPERQRLVVSFALPAGRSEPDADKPEAPGDQS
```