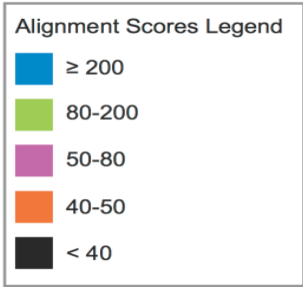FIG S1. The blastn nucleotide sequence homology of LGI1 to the other publically available genomes in the NCBI database.

Block 1 (positions 1–60)

```
                                                                1         10        20        30        40        50        60
                                                                |         |         |         |         |         |         |
Listeria monocytogenes 08-5578 (CP001602)                       ATGGAATGGATTTTTTTAGCAGTCGCTATCGTACTTGAACTTGTTGGAACAACATTGATG
Listeria monocytogenes 08-5923 (CP001604)                       ATGGAATGGATTTTTTTAGCAGTCGCTATCGTACTTGAACTTGTTGGAACAACATTGATG
Desulfitobacterium dehalogenans ATCC 51507 (CP003348)           ATGCAATGGGTTTATTTAGCCCTGGCTATTTTACTTGAAATTTTTGGGACAACACTAATG
  E-value 2x10-49, Query coverage 100%, Identity 74%
Desulfitobacterium hafniense DCB-2 (CP001336)                   ATGCAATGGATTTATTTAGCCCTGGCTATTTTACTGGAAATTTTGGGGACAACACTGATG
  E-value 1x10-38, Query coverage 100%, Identity 72%
Desulfitobacterium hafniense Y51 (AP008230)                     ATGCAATGGGTTTACTTAGCCCTGGCTATTTTACTGGAAATTTTAGGGACAACACTGATG
  E-value 6x10-36, Query coverage 100%, Identity 71%
Desulfitobacterium hafniense PCS-E (LK996017)                   ATGCAATGGGTTTACTTAGCCCTGGCTATTTTACTGGAAATTTTAGGGACAACACTGATG
  E-value 6x10-36, Query coverage 100%, Identity 71%
Clostridium scatologenes ATCC 25775 (CP009933)                  ATGGAATGGATTTACCTTATTCTTGCGATTTTATTTGAAATTGCAGGAACAACATTAATG
  E-value 7x10-29, Query coverage 96%, Identity 70%
Clostridium ljungdahlii DSM 13528 (CP001666)                    -TGGAATGGATTTATCTAATTGGAGCTATTATACTTGAAACAATAGGAACAACTTGTATG
  E-value 1x10-24, Query coverage 99%, Identity 68%
Clostridium autoethanogenum DSM 10061 (CP006763)                -TGGAATGGATTTATCTAATTGGAGCTATTATACTTGAAACAATAGGAACAACTTGTATG
  E-value 1x10-24, Query coverage 99%, Identity 68%
```

Block 2 (positions 61–120)

```
                                                                61        70        80        90        100       110       120
                                                                |         |         |         |         |         |         |
Listeria monocytogenes 08-5578 (CP001602)                       AAAATGTCTGATGGACTTACAAAGCTATTACCAAGTGCAGGGATGTTCATAGCATTTATC
Listeria monocytogenes 08-5923 (CP001604)                       AAAATGTCTGATGGACTTACAAAGCTATTACCAAGTGCAGGGATGTTCATAGCATTTATC
Desulfitobacterium dehalogenans ATCC 51507 (CP003348)           AAAATGTCCGATGGACTGACTAAAATGCTGCCCACCGCAGGAATGTTCCTGGCCTATGCT
Desulfitobacterium hafniense DCB-2 (CP001336)                   AAAATGTCCGAGGGACTGACGAAAATGCTGCCAACGTTAGGGATGTTTCTGGCCTATGTT
Desulfitobacterium hafniense Y51 (AP008230)                     AAAATGTCCGAGGGACTGACGAAAATGCTGCCAACGTTAGGGATGTTCTGGCCTATGTT
Desulfitobacterium hafniense PCS-E (LK996017)                   AAAATGTCCGAGGGACTGACGAAAATGCTGCCAACGTTAGGGATGTTCCTGGCCTATGTT
Clostridium scatologenes ATCC 25775 (CP009933)                  AAAGTGTCTTATGGGTTTACTAAAATATTGCCAACTATAGGAACATTTTTAGGTTATATA
Clostridium ljungdahlii DSM 13528 (CP001666)                    AAGATGTCTGATGGATTTACAAAAATTACTGCCAGCTTTAGGAACAATTCTAACGTATGGC
Clostridium autoethanogenum DSM 10061 (CP006763)                AAGATGTCTGATGGATTTACAAAAATTACTGCCAGCTTTAGGAACAATTCTAACGTATGGC
```

Block 3 (positions 121–180)

```
                                                                121       130       140       150       160       170       180
                                                                |         |         |         |         |         |         |
Listeria monocytogenes 08-5578 (CP001602)                       CTATGTTTCGGTTCTTTAGCATTAGCATTAAAAAAAATACCGGTTAGTGCAGCATATGCT
Listeria monocytogenes 08-5923 (CP001604)                       CTATGTTTCGGTTCTTTAGCATTAGCATTAAAAAAAATACCGGTTAGTGCAGCATATGCT
Desulfitobacterium dehalogenans ATCC 51507 (CP003348)           TTATGTTTTGGTTCCTTGGCCTTGGCATTAAAGAAAATACCCGTTAGCGTGGCCTACGCC
Desulfitobacterium hafniense DCB-2 (CP001336)                   TTATGTTTTAGTTCCTTCGCCCTGGCCTTAAAGAAAATACCGGTCAGCGTCGCCTATGCC
Desulfitobacterium hafniense Y51 (AP008230)                     TTATGTTTTAGTTCCTTCGCCCTGGCCTTAAAGAAAATACCAGTCAGCGTCGCCTATGCC
Desulfitobacterium hafniense PCS-E (LK996017)                   TTATGTTTTAGTTCCTTCGCCCTGGCCTTAAAGAAAATACCAGTCAGCGTCGCCTATGCC
Clostridium scatologenes ATCC 25775 (CP009933)                  ATATGCTTTATTTGTTTATCTATGGCGTTGAAAAAAATAGATATAAGTGTGGCATATGCT
Clostridium ljungdahlii DSM 13528 (CP001666)                    TTGTGCTTTGTACTTTTTTCAATATCTTTAAAAAAGATACCTGTGAGTGTGGCATATGCT
Clostridium autoethanogenum DSM 10061 (CP006763)                TTGTGCTTTGTACTTTTTTCAATATCTTTAAAAAAGATACCTGTGAGTGTGGCATATGCT
```

```
                                                          181       190       200       210       220       230       240
                                                          |         |         |         |         |         |         |
    Listeria monocytogenes 08-5578 (CP001602)   ATATGGTCTGGAGTTGGAATAGTTGCTATAGCGGTGATTGGAGTTTTATTTTTTAAAGAA
    Listeria monocytogenes 08-5923 (CP001604)   ATATGGTCTGGAGTTGGAATAGTTGCTATAGCGGTGATTGGAGTTTTATTTTTTAAAGAA
  Desulfitobacterium dehalogenans ATCC 51507 (CP003348)   GTATGGTCGGGAGTGGGAATTGTAATTATATCGGTGATAGGAATTCTGGTGTTCAAAGAA
     Desulfitobacterium hafniense DCB-2 (CP001336)   GTATGGTCCGGAGTGGGGATTGTGGTTATATCGGCCATAGGAATAGCAGTGTTCAAAGAA
       Desulfitobacterium hafniense Y51 (AP008230)   GTATGGTCCGGAGTGGGGATTGTGGTTATATCGGCCATAGGAATAGCAGTGTTCAAAGAA
     Desulfitobacterium hafniense PCS-E (LK996017)   GTATGGTCCGGAGTGGGGATTGTGGTTATATCGGCCATAGGAATAGCAGTGTTCAAAGAA
        Clostridium scatologenes ATCC 25775 (CP009933)   ATATGGTCTGCAGCTGGATTAGTTATACTATCAACAATTGGAATATTTGTTTTTAAAGAA
       Clostridium ljungdahlii DSM 13528 (CP001666)   ATATGGTCAGCTGCAGGAACTACTATTATATCAGTAATAGGAATTTTTATTTTTTAAAGAA
    Clostridium autoethanogenum DSM 10061 (CP006763)   ATATGGTCAGCTGCAGGAACTACTATTATATCAGTAATAGGAATTTTTATTTTTTAAAGAA


                                                          241       250       260       270       280       300       310
                                                          |         |         |         |         |         |         |
    Listeria monocytogenes 08-5578 (CP001602)   AATGTCAACGCAATAAAAGTAGTATCTATACTTCTCATTGTAGCAGGGGTTGTAGGCCTG
    Listeria monocytogenes 08-5923 (CP001604)   AATGTCAACGCAATAAAAGTAGTATCTATACTTCTCATTGTAGCAGGGGTTGTAGGCCTG
  Desulfitobacterium dehalogenans ATCC 51507 (CP003348)   ACCATCAACACCCTGAAAGTTGTATCCATAGTCCTTATTGTAGCGGGAGTGGTGGGTTTG
     Desulfitobacterium hafniense DCB-2 (CP001336)   ACCGTCACTACCCTGAAAGTCGTATCCATCGTCCTGATTGTAGCAGGAGTAGTGGGTTTG
       Desulfitobacterium hafniense Y51 (AP008230)   ACCGTCACTACCCTGAAAGTCGTATCCATCGTCCTGATTGTAGCAGGAGTAGTGGGTTTG
     Desulfitobacterium hafniense PCS-E (LK996017)   ACCGTCACTACCCTGAAAGTCGTATCCATCGTCCTGATTGTAGCAGGAGTAGTGGGTTTG
        Clostridium scatologenes ATCC 25775 (CP009933)   AGCATTAGTGTTCTAAAAGTAGTATCTTTAGCCTTTATTGTATTAGGGGTTATTGGACTA
       Clostridium ljungdahlii DSM 13528 (CP001666)   AATATAAGTATTTTAAAAGTTTTGTCTATATTTTTTATTATATTAGGAGTTGTAGGATTA
    Clostridium autoethanogenum DSM 10061 (CP006763)   AATATAAGTATTTTAAAAGTTTTGTCTATATTTTTTATTATATTAGGAGTTGTAGGATTA


                                                          311       320       330
                                                          |         |         |
    Listeria monocytogenes 08-5578 (CP001602)   AACTTAGGTGGTGTTGCTCATTAA
    Listeria monocytogenes 08-5923 (CP001604)   AACTTAGGTGGTGTTGCTCATTAA
  Desulfitobacterium dehalogenans ATCC 51507 (CP003348)   AACTTAAGCGGTACGGCTCATTAA
     Desulfitobacterium hafniense DCB-2 (CP001336)   AACCTGGGCGGTACCGCTCATTAA
       Desulfitobacterium hafniense Y51 (AP008230)   AACCTGGGCGGTACCGCTCATTAA
     Desulfitobacterium hafniense PCS-E (LK996017)   AACCTGGGCGGTACCGCTCATTAA
        Clostridium scatologenes ATCC 25775 (CP009933)   AACTTAAGTGGAGT----------
       Clostridium ljungdahlii DSM 13528 (CP001666)   AACTTTAGCGGCGTTAGTCACTAA
    Clostridium autoethanogenum DSM 10061 (CP006763)   AACTTTAGCGGCGTTAGTCACTAA
```

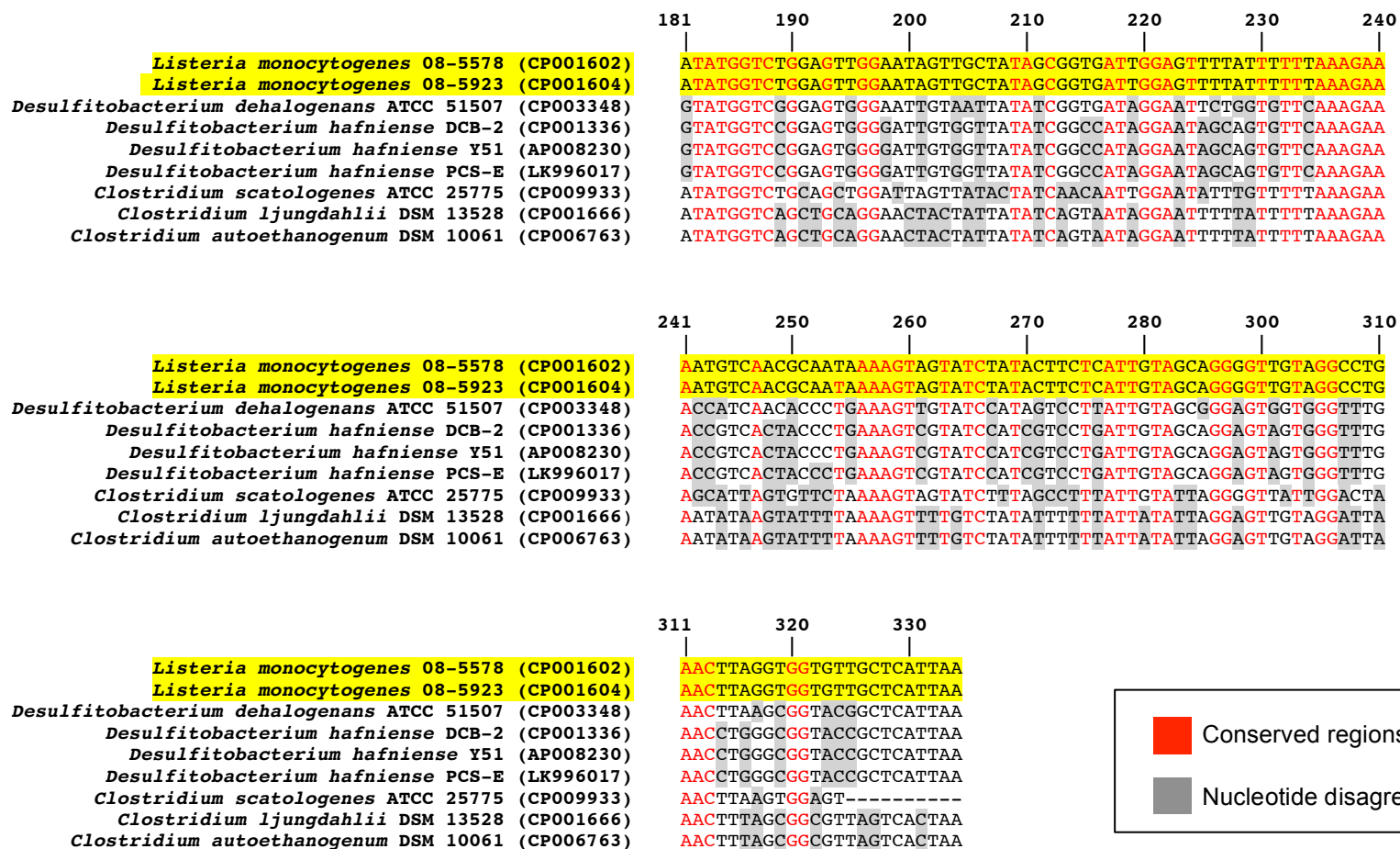| ■	Conserved regions
■	Nucleotide disagreements

FIG S2. The blastn nucleotide sequence homology of *emrE_{Lm}* (highlighted in yellow) to the other publically available genomes in the NCBI database.
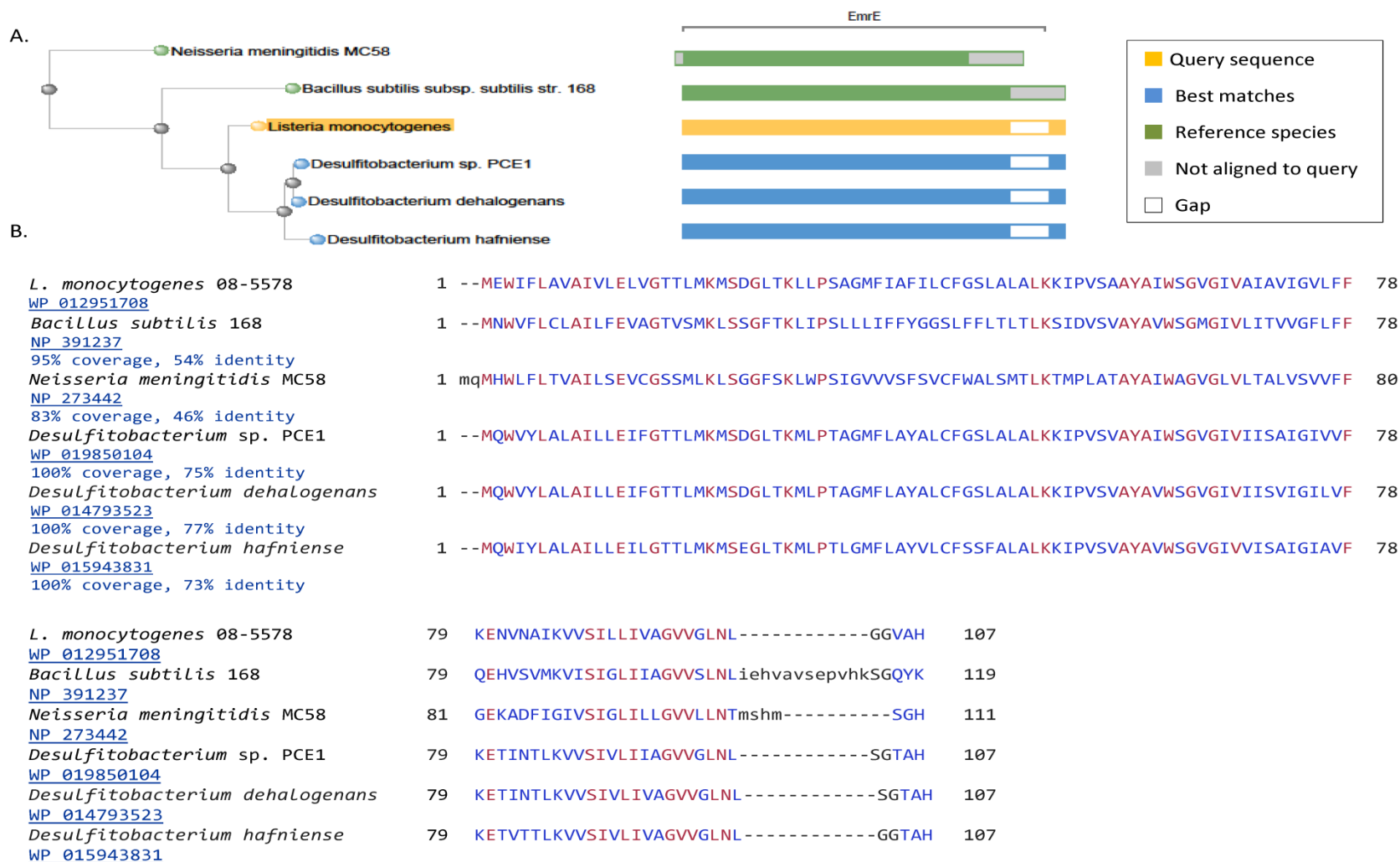
A.

B.

```
L. monocytogenes 08-5578        1 --MEWIFLAVAIVLELVGTTLMKMSDGLTKLLPSAGMFIAFILCFGSLALALKKIPVSAAYAIWSGVGIVAIAVIGVLFF  78
WP_012951708
Bacillus subtilis 168           1 --MNWVFLCLAILFEVAGTVSMKLSSGFTKLIPSLLLIFFYGGSLFFLTLTLKSIDVSVAYAVWSGMGIVLITVVGFLFF  78
NP_391237
95% coverage, 54% identity
Neisseria meningitidis MC58     1 mqMHWLFLTVAILSEVCGSSMLKLSGGFSKLWPSIGVVVSFSVCFWALSMTLKTMPLATAYAIWAGVGLVLTALVSVVFF  80
NP_273442
83% coverage, 46% identity
Desulfitobacterium sp. PCE1     1 --MQWVYLALAILLEIFGTTLMKMSDGLTKMLPTAGMFLAYALCFGSLALALKKIPVSVAYAIWSGVGIVIISAIGIVVF  78
WP_019850104
100% coverage, 75% identity
Desulfitobacterium dehalogenans 1 --MQWVYLALAILLEIFGTTLMKMSDGLTKMLPTAGMFLAYALCFGSLALALKKIPVSVAYAVWSGVGIVIISVIGILVF  78
WP_014793523
100% coverage, 77% identity
Desulfitobacterium hafniense    1 --MQWIYLALAILLEILGTTLMKMSEGLTKMLPTLGMFLAYVLCFSSFALALKKIPVSVAYAVWSGVGIVVISAIGIAVF  78
WP_015943831
100% coverage, 73% identity


L. monocytogenes 08-5578       79 KENVNAIKVVSILLIVAGVVGLNL------------GGVAH        107
WP_012951708
Bacillus subtilis 168          79 QEHVSVMKVISIGLIIAGVVSLNLiehvavsepvhkSGQYK       119
NP_391237
Neisseria meningitidis MC58    81 GEKADFIGIVSIGLILLGVVLLNTmshm----------SGH      111
NP_273442
Desulfitobacterium sp. PCE1    79 KETINTLKVVSIVLIIAGVVGLNL-----------SGTAH       107
WP_019850104
Desulfitobacterium dehalogenans 79 KETINTLKVVSIVLIVAGVVGLNL------------SGTAH      107
WP_014793523
Desulfitobacterium hafniense   79 KETVTTLKVVSIVLIVAGVVGLNL------------GGTAH      107
WP_015943831
```

FIG S3. The graphic representation (A) and blastp protein sequence homology (B) of *emrE*_{*Lm*} to the other publically available proteins in the NCBI database obtained using SmartBlast. Reference species represent matches from well-studied species.