ARTICLE ADDENDUM

Gut Microbes 1:4, 1-1; July/August 2010; © 2010 Landes Bioscience

In-depth genetic analysis of *Clostridium difficile* PCR-ribotype 027 strains reveals high genome fluidity including point mutations and inversions

Richard A. Stabler,[1] Esmeralda Valiente,[1] Lisa F. Dawson,[1] Miao He,[2] Julian Parkhill[2] and Brendan W. Wren[1,*]

[1]London School of Hygiene and Tropical Medicine; London, UK; [2]Wellcome Trust Sanger Institute; Cambridge, UK

Supplementary Material

Key words: *Clostridium difficile*, 027 ribotype, point mutations, inversions, hypervirulence

Submitted: 01/28/10

Revised: 03/09/10

Accepted: 03/16/10

Previously published online: www.landesbioscience.com/journals/gut-microbes/article/11870

*Correspondence to: Brendan W. Wren; Email: Brendan.Wren@lshtm.ac.uk

Addendum to: Stabler RA, He M, Dawson L, Martin M, Valiente E, Corton C, et al. Comparative genome and phenotypic analysis of *Clostridium difficile* 027 strains provides insight into the evolution of a hypervirulent bacterium. Genome Biol 2009; 10:102; PMID: 19781061; DOI: 10.1186/gb-2009-10-9-r102.

```
CDR20291_1234       ATGCTAGGTGAAAAGATGAGAAATATAAGAAAAAGCAAGAAAAAAACATTAAGTGATGTT 60
CD196_1256          ATGCTAGGTGAAAAGATGAGAAATATAAGAAAAAGCAAGAAAAAAACATTAAGTGATGTT 60
630_CD1388          ATGCTAGGTGAAAAGATGAGAAATATAAGAAAAAGCAAGAAAAAA-CATTAAGTGATGTT 59
                    ********************************************* **************

CDR20291_1234       TCCAAATTGACAGATTTATCTATAAGTTATATCTCTCAAATAGAAAGAGATGCTATTGAA 120
CD196_1256          TCCAAATTGACAGATTTATCTATAAGTTATATCTCTCAAATAGAAAGAGATGCTATTGAA 120
630_CD1388          TCCAAATTGACAGATTTATCTATAAGTTATATCTCTCAAATAGAAAGAGATGCTATTGAA 119
                    ************************************************************

CDR20291_1234       CCATCCTTGTCTTCATTGAGAAAAATCGCTGAAGTTTTAGACACTCCTTTATATATGTTT 180
CD196_1256          CCATCCTTGTCTTCATTGAGAAAAATCGCTGAAGTTTTAGACACTCCTTTATATATGTTT 180
630_CD1388          CCATCCTTGTCTTCATTGAGAAAAATCGCTGAAGTTTTAGACACTCCTTTATATATGTTT 179
                    ************************************************************

CDR20291_1234       ATGGATGACAATAATACTGATGATTTAGTAATTAGAAAAGAAGATAGAGTTATGATGAAA 240
CD196_1256          ATGGATGACAATAATACTGATGATTTAGTAATTAGAAAAGAAGATAGAGTTATGATGAAA 240
630_CD1388          ATGGATGACAATAATACTGATGATTTAGTCATTAGAAAAGAAGATAGAGTTATGATGAAA 239
                    ***************************** ******************************

CDR20291_1234       TTTCCAAAGAGTGAAATGTTTTACGAGATAGTATCTCCAATGCCTACAACTGAATTTACA 300
CD196_1256          TTTCCAAAGAGTGAAATGTTTTACGAGATAGTATCTCCAATGCCTACAACTGAATTTACA 300
630_CD1388          TTTCCAAAGAGTGAAATGTTTTACGAGATAGTATCTCCAATGCCTACAACTGAGTTTACA 299
                    ***************************************************** ******

CDR20291_1234       CCTTCAATTTTATTTGTAGAGTTTGAACTTAAACCAGAAAGTGAGGATGCTAAAGATTAT 360
CD196_1256          CCTTCAATTTTATTTGTAGAGTTTGAACTTAAACCAGAAAGTGAGGATGCTAAAGATTAT 360
630_CD1388          CCTTCAATTTTATTTGTAGAGTTTGAACTTAAACCAGAAAGTGAGGATGCCAAAGATTAT 359
                    ************************************************** *********

CDR20291_1234       ATCTATCATGCATCAGAAGAAATTATGGTGGTAACGAGTGGTGTGGTTGATATTTGTATG 420
CD196_1256          ATCTATCATGCATCAGAAGAAATTATGGTGGTAACGAGTGGTGTGGTTGATATTTGTATG 420
630_CD1388          ATATATCATGCATCAGAAGAAATTATGGTGGTAACGAGTGGTGTGGTTGATATTTGTACG 419
                    ** ******************************************************* *

CDR20291_1234       GGTGAAAAGGTAGTTAGATTAAATCCAGGTGACTCAACATTTATAAAAGCTAATGTACCA 480
CD196_1256          GGTGAAAAGGTAGTTAGATTAAATCCAGGTGACTCAACATTTATAAAAGCTAATGTACCA 480
630_CD1388          GGTGAAAAGGTAGTTAGATTAAATCCAGGTGACTCAACATTTATAAAAGCTAATGTACCA 479
                    ************************************************************

CDR20291_1234       CATAAAATCATCAATCCAAGTAAAGATACAATAGCTCGTGGATATGGAGTTATATCACCT 540
CD196_1256          CATAAAATCATCAATCCAAGTAAAGATACAATAGCTCGTGGATATGGAGTTATATCACCT 540
630_CD1388          CATAAAATCATCAATCCAAGTAAAGATACAATAGCTCGTGGATATGGAGTTATATCACCT 539
                    ************************************************************

CDR20291_1234       CCAATTTGGCCAATAAAATCTAAATAA 567
CD196_1256          CCAATTTGGCCAATAAAATCTAAATAA 567
630_CD1388          CCAATTTGGCCAATAAAATCTAAATAA 566
                    ***************************
```

```
CDR20291_1656      MEYYIVDSFATKLFKGNPAGVCVLDRIIPLELMQKIAEENNLPETAFVVKGKGNYELRWF 60
CD196_1681         MEYYIVDSFATKLFKGNPAGVCVLDRIIPLELMQKIAEENNLPETAFVVKGKGNYELRWF 60
630_CD1761         MEYYIVDSFATKLFKGNPAGVCVLDRRIPLELMQKIAEENNLPETAFVVKGKGNYELRWF 60
                   ************************** *********************************

CDR20291_1656      TPKAEIDLCGHATLAAAYVISNFIDVNVKRIDFFTQSGKLEVTRNGNLYEMIFPEIMPIE 120
CD196_1681         TPKAEIDLCGHATLAAAYVISNFIDVNVKRIDFFTQSGKLEVTRNGNLYEMIFPEIMPIE 120
630_CD1761         TPKAEIDLCGHATLAAAYVISNFIDVNVKKIDFFTQSGKLEVTRNGNLYEMIFPEIMPIE 120
                   *****************************:******************************

CDR20291_1656      IELSP#QANLIGCVPSAVYSSRDLILLLNSEQEVINYKPNYAQLRKLTDWLGIIITPQGS 179
CD196_1681         IELSP#QANLIGCVPSAVYSSRDLILLLNSEQEVINYKPNYAQLRKLTDWLGIIITPQGS 179
630_CD1761         IELSPQQANLIGCVPSDVYSSRDLILLLNSEQEVINYKPNYAQLRKLTDWLGIIITAQGS 180
                   ***** ********** ***************************************.***

CDR20291_1656      NTDFVSRYFCPELDSEDPVTGSSHCNFIPYWSEKLGKHKMVAAQLSNRGGIIQCEVLKDN 239
CD196_1681         NTDFVSRYFCPELDSEDPVTGSSHCNFIPYWSEKLGKHKMVAAQLSNRGGIIQCEVLKDN 239
630_CD1761         NTDFVSRYFCPELDSEDPVTGSSHCNLIPYWSEKLGKHKMVAAQLSNRGGIIQCEVLKDN 240
                   **************************:*********************************

CDR20291_1656      TVKISGEAVLFMQGTIKIDI 259
CD196_1681         TVKISGEAVLFMQGTIKIDI 259
630_CD1761         TVKISGEAVLFMQGTIKIDI 260
                   ********************
```